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Acknowledgments

This dissertation is dedicated to the memories of Grandison Frank Jones III, and Albert Roland, whose ideas of kindness and Citizen´s Ownership, respectively, inspired this work.

To all those whom
I met on my quest
I must give thanks
For good, for ill
The sweet, the bitter
Finally balancing
For, all of you
Helped me
To find
Home

Shira Siir Destinie Antoinette Jones

List of Abbreviations

CC: Complementary Currency

DUHC: Democracy Unlimited of Humboldt County

ESOP: Employee Stock Ownership Plan

FOMC: Federal Open Market Committee

IRS: Internal Revenue Service

LETS: Local Exchange Trading System / Scheme

MCS: Mutual Credit System

MoE: Medium of Exchange

MoP: Means of Payment

OECD: Organisation for Economic Co-operation and Development

PID: Participatory Internal Decision-making

RF: Regulatory Framework

SMG: Shared Monetary Governance

SoV: Store of Value

SPC: Special Purpose Currency

The Fed: The United States Federal Reserve

UoA: Unit of Account

Chapter 1 - Introduction

In much of the world there is no alternative to using money. Market dependence translates into dependence on money, given that few communities remain self-reliant to a degree that allows them to meet their own needs without external resources. Furthermore, nearly all monetary exchanges within communities are regulated by sets of institutions and rules that are beyond their control. In the majority of the world, monetary governance is largely dominated by a market-centred ideology which removes decision-making access from most affected stakeholders, i.e. those who use or are otherwise affected by money. Creation of national currencies through the banking system remains largely under the oversight of central banks and forms part of a wider market-oriented monetary regulatory framework that, according to the conventional economic orthodoxy, should remain independent of 'political' influence.

The emphasis on the political independence of monetary governance has resulted in very limited transparency and accountability and nearly always precluded public participation. However, the financial and monetary crisis that began in autumn 2008 placed in serious question the economic orthodoxy regarding the institutional frameworks that regulate monetary systems. Indeed, the character, scope and degree of public participation in monetary and financial governance are now at the centre of debates concerning the latter's unavoidable restructuring following the crisis.[1]

Consequently, researching the governance of money as a special form of a *socio-political* - and not merely economic - regulation has acquired special urgency. Transparency, accountability and public participation are emerging again as desirable principles for the restructuring of monetary governance if the devastating socio-economic effects of short-term market-driven decisions are to be avoided. To a large extent such suggestions renew earlier proposals, such as those put forward by Nobel laureate Amartya Sen (1999), who argues strongly for the right of communities to have a voice in the governance of key aspects of their collective lives of which monetary governance is among the most important. They also echo calls of many development economists who 'believe that transparency, accountability and participation in political decision-making will have a direct effect

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[1] See for example Monbiot, G.(2009). "If the State Can't Save Us, We Need a Licence to Print Our Own Money" *The Guardian* Tuesday 20 January 2009. See also: Garten, J.(2008). Global Authority Can Fill Financial Vacuum *Financial Times*, September 25 2008. Regarding the necessity for more transparency and accountability see also: Aguilar, L.A., (2009). Increasing Accountability and Transparency to Investors. *In* U.S.S.A.E.C. Commissioner (ed.) *The SEC Speaks in 2009.* Washington, D.C.

on the level of market fairness' (Ribeiro, 2005). Last, but by no means least, such suggestions join the voices of a growing number of authors who see in the so-called *Complementary* Currencies (CCs) the seeds for more transparent and participatory monetary governance (see Lietaer, 2002) in addition to their beneficial effects to financial stability (see Kennedy, 2007).[2]

Indeed, for the last three decades a 'silent revolution' has been taking place with the dramatic expansion of CCs, i.e. the wide variety of non-state sponsored forms of money, issued by different institutions (local and regional authorities, businesses, communities) with differing objectives. Historically, the establishment of CCs represented instances of monetary institutional innovations during times of financial crisis as Gatch (2006), Greco (2001) and Douthwaite (1996) have pointed out. For example, in the case of the Great Depression, Gatch (2006), echoing Fisher (1935), investigated the many varieties of Stamp Scrip issued by communities, by private individuals, and by firms during the 1930's as a result of the financial crisis.

More often than not, CCs were community-based initiatives aimed at the re-vitalisation of local communities' economic welfare as well as protection from the devastating effects of their exposure to national and international market forces. It should be mentioned here that this work adopts the term 'Community-based Currencies' for those Complementary Currencies (CCs) that are sponsored by groups of citizens or by non-profit organisations located in and for the explicit benefit of local communities in order to distinguish them from other CCs which may be sponsored by private individuals or by businesses. While the economic benefits of CCs of all types have been widely discussed, and are indeed a strong reason for the uptake within communities of local currencies, North (1997) points out that community solidarity and independence provide other rationales for their use. Further, Cahn (2006), Hutchinson (2002) and Linton (1994) emphasise the importance of community-based control over the decision-making processes of money. Indeed, the additional perspective of community governance and social control over the economic sphere emphasised by Fung (2001), North (2007), Primavera (2005) and others has overridden the purely economic benefits of local currencies.

The appeal of Community-based currencies, for many, is this possibility of enhanced community-level governance of monetary institutions. However, the objectives of the institution that sponsors a

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[2] Kennedy Margrit (2007) FINANCIAL STABILITY: A CASE FOR COMPLEMENTARY CURRENCIES paper prepared for the China-Europa Forum, Tasks and Responsibilities of Institutions of the Financial Sector Paris and Brussels 4th – 7th of October 2007, accessed 16/6/2009 from http://www.margritkennedy.de/pdf/PRE_finStab.pdf

currency can conflict with this appeal, given that objectives for currencies issued by non-state institutions differ based on the goals of the institution. Advocates for Complementary Currencies such as Linton (1994) and Lietaer (20002) emphasise local businesses as users and potential sponsors of currency, but do not emphasise the conflicting goals and decision-making processes used by different types of institutions, such as businesses and non-profit institutions. Those differences can result in varying levels of transparency and accountability for different currency stakeholders, particularly with privately issued currencies, as noted by Greco (2001).

Against this background, this study aims to contribute conceptually and empirically to the body of literature that explores the potential for transparency, accountability and public participation in different currency governance models. This is achieved by focusing on those aspects of currency governance that hinder or facilitate stakeholder access to relevant decision-making processes. In particular, the study explores conceptually and empirically the relationship between stakeholders' influence and the different functions of money across different regulatory and geographical levels (local, national etc.).

In particular, **conceptually**, the study explores the literature around the various processes, functions and circulatory ranges of money. Further, it constructs a framework within which the potential for stakeholder influence can be analysed. This Shared Monetary Governance (SMG) framework combines a set of criteria that can capture the overall capacity of any institution issuing a currency to facilitate full priority-setting access to monetary decision-making by all stakeholders; in other words, to provide conditions for transparent, accountable and participatory monetary governance. **Empirically**, the study operationalises the SMG framework by means of a comparative study of different currencies. A research instrument has been especially developed to facilitate this comparison which relies upon a composite scoring method to capture the 'performance' of the different currencies across different criteria. Scope and time limitations required focus on a small set of currencies. Thus, a representative set of modern currencies in the USA was chosen with the expectation of further application to currencies in other countries as future research. In total four currencies were compared: namely, the US Dollar and three representative non-national currencies. Although the research instrument is applied to the comparison of the aforementioned four currencies, its design allows it to be used to evaluate the potential for shared governance of larger sets of currencies.

The structure of the work follows a step-by-step approach toward the theoretical and empirical exploration of the potential of different currency institutions for transparent, accountable and participatory monetary governance. Chapter 2 provides a literature review and discusses the main approaches to understanding money, its scale and various approaches to monetary governance. This chapter identifies a number of serious limitations with previous approaches and provides the research questions. In effect, the chapter highlights the need for a modified conceptual and analytical framework for exploring currency institutional potential for SMG, a task that is undertaken in Chapter 3. In this chapter an alternative framework is introduced where the core criteria of transparency, accountability and participatory decision-making are discussed in relation to the currency-specific decision-making processes involving seigniorage, issuance and backing. In addition the chapter explains how the links between functional and geographical ranges are included in the new framework.

Chapter 4 offers a discussion on the methodology and the research instrument used to operationalise this framework. This chapter describes in detail the composite scoring method used to summarise large quantities of qualitative information for each currency and provides the necessary justification for the criteria used in the scoring process. Chapters 5 and 6 are both empirical chapters. Chapter 5 offers a step-by-step 'rich description' of the data used and explains the scores achieved by each currency. Chapter 6 is the comparative (analytical) chapter where, in a dimension-by-dimension mode of presentation, the four currencies are compared. Chapter 6 culminates in an overall comparison of the composite total potential of the currencies for Shared Monetary Governance. The chapter demonstrates how the comparative exploration of currencies as institutionalised processes and governance structures exposes their potential for enhancing transparency, accountability and the participation of communities and stakeholders. Finally, Chapter 7 offers the study's reflections on the contribution of the new theoretical framework and empirical findings to the debates on currency governance. It ends with reflections on the limitations of the study and the potential for future research.

Chapter 2 - Money and its Governance: A Review of the Literature

2.1 Introduction

Governance of money is important for two reasons. First, Fung and Olin-Wright (2003) show how centralisation of governance determines stakeholder input into institutional decision-making. Second, Polanyi (1957) has shown how currency governance affects and is affected by the number of functions fulfilled by a currency. In this context, this project approaches currencies not as mere objects fulfilling economic functions but as complex institutions that fulfil multiple and interacting socio-political and economic functions. There are indeed a variety of literatures and paradigms that explore aspects of the above but there seems to be very little conceptual cross-fertilisation between them (see also Table 2.1 below). This chapter does not, and cannot, claim to provide an exhaustive review of all these literatures. It is hoped however, that what is provided in this chapter will give the reader an understanding of the different perspectives, the gaps between them and ultimately, how the proposed analytical framework of Shared Monetary Governance can be a first step towards a more holistic approach to understanding the interaction between stakeholder input, the function and scale of currencies and their regulation.

This chapter explores how three major influences on the governance of a currency have been explained so far, based on a review of the relevant literature. Those influences are:

•First, regulatory frameworks external to a currency (mainly national but increasingly supra-national regulations)

•Second, institutional decision-making internal to a currency

•Third, the scale of a currency, here defined by both the number of monetary functions filled by the currency and its geographical range of circulation.

These three influences shape the governance of any currency in general. The first two form the decision-making processes which are moderated by the third, defined here as the functional currency scale. Section 2.2, discusses key definitions surrounding money and its governance. The

chapter then explores how the relevant literature approaches the three influences mentioned above. Section 2.3 discusses approaches to governance influences external to any currency, US national RFs in particular, while section 2.4 discusses the internal decision-making processes focusing on transparency and accountability in internal decision-making (through seigniorage, issuance and backing of money). Finally section 2.5 examines the impact of scale on the governance of any currency.

2.2 Understanding Money, Currencies and Monetary Governance

2.2.1 Understanding Money and Currencies

In keeping with traditional usage based definitions of money, (see for example Hume 1977) Polanyi (1977) listed the standard uses or functions of money, which include:

- providing a standard of value or unit of account (UoA),
- a medium of exchange (MoE),
- a store of value (SoV)

Any currency must function as a unit of account to track exchanges and equivalencies. Dalziel (2000) calls a medium of exchange anything generally accepted in payment for transactions. Mafi-Kreft (2003) concurs with other economists in defining store of value as purchasing power, measured by inflation. Popp (1970) agrees that purchasing power is critical to storing value, but stresses the importance of distinguishing between currency as a medium of exchange and as a means of payment. He differentiates exchange media from payment media, defining a means of payment as that which governments or local authorities accept in payment of taxes, fines and fees.

Polanyi (1977) also asserted that there were two distinct categories of money based on the number of functions that money fulfils:

- General Purpose money, and
- Special Purpose Currencies

Historically, different currencies were used for different purposes. General Purpose money refers to money used to fulfil all the three aforementioned functions simultaneously, i.e. as a Unit of Account (UoA), Medium of Exchange (MoE), and Store of Value (SoV). By Polanyi's definition, currencies which do not perform all three of these functions are Special Purpose Currencies (SPCs) and complementary currencies are of the latter type.

While criticising the function-based definitions of money used by Polanyi and others, Codere (1968) agrees on the importance of distinguishing between the monetary functions of accounting, exchange and storage of value. By placing a numerical value on goods and services, prices allow money to be used as a UoA. Money functions as a MoE when it is accepted in payment for goods or services. Money thereby eliminates barter´s double coincidence of needs, in which each party must have something the other party wants[3]. Finally, money also provides a vehicle for SoV when purchasing power, which Kocherlakota (1996) defines as the ability of a given amount of money to purchase the same goods and services, remains stable over time.

Carruthers (2005) agrees on this functional nature of money, but adds that it is socially constructed and based on trust. In fact there are sociological and anthropological approaches that define money less by function and more by stakeholder influence. Indeed, Hart (2001) and Kocherlakota (1996) view money as a socially constructed form of memory. Such social construction implies a need for transparency, but for Buchan (1997) paradoxically, social desire gives money its value through non-transparent processes. Nonetheless, the impact of such processes on stakeholders redoubles the need for transparency. Simmel (1978) agrees that these changes in the value of money affect stakeholder interests, implying a need for accountability due to the changed value of the acquired money. Dodd (1994) however, contends that Simmel is describing the subjective value of money, but acknowledges the need for social accountability by adding 'means of speculation' to the list of functions of general purpose money. Zelizer (1997) likewise holds money accountable to society, asserting that earmarking money for specific purposes can change the subjective value of that money. Such social rather than functional approaches to money may manifest stakeholder desire to interact more personally with monetary decision-making processes. Furthermore, Rowbotham (1998) and Zarlenga (2002) cite Marx (1867), del Mar (1895) and Keynes (1930) in asserting that legal tender status, rather than function, defines money.

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[3] Although Adam Smith´s claim that money evolved out of barter is beyond the scope of this study, both Keynes and Gesell argued that Smith´s focus on the MoE function neglects crucial conflicts with SoV.

This work therefore defines currency as any transferable or spendable medium (whether as physical notes or credit-based) which is accepted by third parties for goods or services. This definition assumes that currencies are part of complex **social** institutions (not simply economic ones) vested with meaning which is directly related to the functions that currencies are called to perform. In addition, their governance constructs and is affected by the interests of the stakeholders. It is to the later that our focus now turns. While the terms money and currency are used interchangeably in this work, the emphasis here is on currency, which narrows down to more tangible considerations of governing transferable media that can be used to signify value, rather than money, thus synthesising governance, functional and social aspects involving broader considerations than simply currency.

2.2.2 Relating Monetary Governance to Currency Institutions and Stakeholder Access

With regard to the wider use of the term *governance*, general definitions are still evolving. There is thus far no formally agreed upon definition of governance, as the term entails both normative and analytical aspects depending upon the perspective within which it is discussed.[4] Broadly speaking, the consensus appears to come close to the view that Jessop (1995) and Stoker (1998) espouse, namely, that governance is a complex and integrated combination of state regulatory mechanisms, markets and civil society or 'third sector' actors. Jessop asserts that in order to understand governance processes internal to an institution, one must take into account external regulatory frameworks under which institutions must operate. Stoker's (1998) inclusion of autonomous self-government in his governance framework suggests that exploring monetary governance must include both external institutional oversight and community monetary institutions. Further, Papadopoulos and Carmel (2003) emphasise the influence of state regulatory frameworks in processes of governing a policy 'area' or institutions by regulating what is governed, how and by whom. In this context, *governance,* in the general sense, is used as a term in this work to describe the complex socio-political process by which a domain or activity of social, political or economic life is shaped. That is, how actors and stakeholders interact in creating, reproducing or changing a given institution, under relevant state regulation, which define acceptable decision-making activities and functions.

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[4] see for example Kajaer (2004). Kajaer, Anne M., (2004) *Governance,* Cambridge: Polity Press

In the literature, *monetary governance* is often used interchangeably with the term *monetary policy* to refer to interest rate policy set by central banks and the broader discussions of monetary governance tend to focus on function, with only few authors focusing on decision-making processes. From the latter authors, Underhill (2000) points to cooperation between state regulators and markets, in contrast with Strange (1988) who highlighted the power struggle between them, illustrating the power of actors outside of an institution to exert influence on institutional decisions. Further, Fung and Olin-Wright (2003) showed how centralisation of governance determines stakeholder input into institutional decision-making which affect them while Polanyi (1957) showed how currency governance is affected by and affects the number of functions fulfilled by a currency.

Nevertheless, despite covering individual facets of both monetary governance and economic functionality, none of these approaches integrates the impact of currency governance with scale on all stakeholders. In this context, key questions that arise from the limitations in the literature include: who are the stakeholders involved in monetary governance, and what criteria can be used to explore their input into that governance. This work defines the scope of stake-holder participation as the widest possible social scope, which includes all users of money. The nature of stake-holder participation, given such a wide scope, can ideally be defined as both economic and democratic. A decision to either spend or boycott a particular currency is a market and functional use decision. However, living in a democratic society which upholds participation as a key principle makes access to decision-making processes a vital part of the nature of currency governance. While all currency users have the ability to affect the functionality of any currency through use or non-use (i.e. boycott) of the currency, currencies which are either issued through central banks or which are privately issued do not allow for full user access to the decision-making processes involved in issuing and maintaining those currencies. It is this access to governance processes which is neglected yet vital, together with functionality of money.

With regard to the former, as mentioned earlier, at least three influences shape the governance of money and thus interface with stakeholders:

- First, the regulatory frameworks (RFs) external to currencies,
- Second, the decision-making internal to the currency institution,
- Third, scale, here defined as the functions of money at various geographical ranges.

Table 2.1 below provides a typology of stakeholders vis-à-vis the influences shaping the governance of money mentioned above.

Table 2.1: Stakeholders in Monetary Governance

Influences on Monetary Governance	Stakeholders
External currency governance	National Regulators as **indirect stakeholders**
Internal currency governance	Institutional decision-makers as **direct stakeholders**
Monetary Scale	Users affected by money as **direct stakeholders** (often with no currency institutional decision-making power)

For an alternative view of this table and Venn Diagrams, see Appendix 5.

Furthermore, regarding the (normative) criteria used to evaluate stakeholder input to monetary governance, OECD (2002) sources agree that established governance principles include predictability, or consistent use of legal frameworks, transparency and accountability while Johnson (1997) and others add participation, quoting the Canadian International Development Agency as using the terms participation and equitability interchangeably. Honest or predictable legal frameworks imply consistent treatment of currencies on the part of regulatory bodies. Transparency refers to access to information and to open processes, while accountability is defined by Kourtikakis (2004) as commitment by a responsible party to accomplish a given task. Hunt (1994) on the other hand, emphasises the link between accountability and responsibility, which implies a need for *participation*. Definitions of participation vary, as illustrated by contention around Arnstein's (1969) widely cited Ladder of Participation. Henderson (2003) for instance worries that the Ladder, frequently used as a measure of participation, may not show community consultation as "real" participation.

To conclude, the premise of this study is that the governance of any currency institution entails balancing power between those stakeholders who wield decision-making authority and the impact of currency functions on currency users – those stakeholders with no decision-making power. This work therefore argues that it is necessary to know what types and scales of currency institutions

most effectively facilitate stakeholder access, thus permitting further choices and adjustments. Although debates on monetary governance involve external and internal stakeholders to some extent, these debates largely neglect interactions between governance and scale related factors (see sections below), resulting in a gap in the literature which this work hopes to narrow somewhat. Therefore, this study will address a limited number of decision-making processes which are specific to currencies within the context of the four established governance principles discussed previously:

•consistent regulatory frameworks,

•transparency,

•accountability and

•participation.

Table 2.2 summarises those principles as they apply to currency governance with respect to stakeholder input.

Table 2.2: Institutional Governance Principles

Influences on Monetary Governance	Principles for evaluating stakeholder input
External Governance	Consistent Regulatory Frameworks (as influenced by indirectly affected decision-making stakeholders)
Internal Governance	Transparency – Accountability - Participation (as influenced by directly affected decision-making stakeholders)
Monetary Scale	Input of users who are affected by money but are not included in currency institutional decision-making (as influenced by directly affected stakeholders)

For an alternative view of this table and Venn Diagrams, see Appendix 5.

This summary provides a brief overview of non-national currency institutional governance vis-à-vis stakeholder access in the relevant literature. Taylor (2003) contends that non-national currencies are a manifestation of stakeholder desire for greater input into overall monetary governance. Greco (2001) agrees, classifying historical currencies in North America based on *backing,* defined as the commodity for which users can redeem the currency. Greco contends that backing is a key factor in the ability of a currency to empower communities. Ardron (2006) enlarges upon Greco's work in

defining complementary currencies, which are designed to exist alongside national money. This definition of complementary currencies includes store loyalty points exchanged between non-store customers. Loyalty programs, typically studied from the perspective of boosting business yield to a store or chain, as by Capizzi and Ferguson (2005), are now coming to be seen as a type of currency that may increase stakeholder access to monetary institutions.

Studies of non-national currencies have investigated them either as functional tools for local economic development or as attempts at resisting globalisation. Mercedes Gomez (2006), Mascornick (2007), Aldridge and Patterson (2002), and Collom (2005) explore currency functions in the context of how geographical circulation limits could strengthen local business networks. In contrast to these primarily business oriented studies, Cascio (2005), Grover (2006) and Batchelor (2003) primarily focus on local economic outcomes in communities while Seyfang (2001) modifies local economic development concerns by adding a sustainability perspective. Williams (2005) on the other hand sees local currencies as potential 'bridges into work' but largely neglects governance and sustainability. In contrast to these functional perspectives, North (1998) discusses divisions within currency institutions from a social movement perspective, while Pacione (1999) explores currencies as anti-globalization tools. Non-national currencies may offer greater participatory decision-making for stakeholders, but there are no metrics to verify this as, for example, Bini (2008) and Cukierman (1992) have done in measuring levels of central bank independence. Though the functional and geographical impact of money dominates the discussion of monetary governance, there is little focus on internal currency institutional decision-making processes, and no way of measuring the level of decision-making input allowed to currency users. This work attempts to fill part of that gap.

2.3 External Governance: National Regulatory Treatment of Currencies

This section begins the exploration of the three influences on monetary governance mentioned earlier vis-a-vis the governance principles used to evaluate stakeholder input on key decisions. To assist the reader, Table 2.3 shows the application of these governance principles to the specific decisions that must be addressed by monetary institutions. They are presented by specific monetary governance influence and by type of stakeholder.

Table 2.3: Governance Principles Applied to Monetary Institutions

Influences on Monetary Governance	Decisions regarding	Governance Principles	Stakeholders
External Governance	Treatment of different currencies	Consistent treatment of currencies by (National) Regulatory Frameworks	Indirectly affected
Internal Governance	•Seigniorage, •Issuance and •Backing of a currency	Transparency Accountability Participation	Directly affected
Monetary Scale	Use of currency by function and geography	Influence of currency users	Directly affected

For an alternative view of this table and Venn Diagrams, see Appendix 5.

The first influence is external governance: the national regulatory treatment of different currency institutions and how consistently they are all treated. Although national monetary regulations exert both decision-making and functional influence on all currencies, national monetary decision-making processes are closed to most currency stakeholders. Lipsey (2007) acknowledges that conventional economics neglects governance issues. National monetary policy indirectly controls issuance by manipulating the supply of money. Ingham (1999) asserts that the issuance decisions controlled by central banks affect every monetary transaction. Although independent central banking is intended to keep national currencies stable and free of manipulation, Iversen (1998) finds that highly centralised RFs prevent input from stakeholders. National regulatory consistency thus affects all currency stakeholders.

Furthermore, with regard to US national RFs, Solomon (1996), Glover (1997) and Shaffer (1998) point out that US Internal Revenue Service (IRS) policy of taxing barter value has discouraged the use of some currencies by generating fear around their legality. However, Cezanne (2006) from a Central Banking perspective agrees with Miller (2004) speaking for Post-Keynesians that community-based currencies, which are sponsored by community groups for use within their local communities, tend to escape the notice of central banks, allowing greater freedom for such currencies. Grover (2006) in contrast believes that these regulatory uncertainties may particularly affect governance of small scale currencies. Such fears and uncertainties in turn can restrict the ability of stakeholders to set local monetary priorities through viable small scale currencies.

2.4 Internal Governance: Transparency, Accountability and Participation via Seigniorage, Issuance & Backing

Just as inconsistent external RFs affect access to currency institutional governance, likewise, internal institutional processes which lack transparency, accountability and participation similarly hinder such access. Transparency, accountability and participation are intrinsic to open governance and essential to monetary institutional decision-making. Discussions of economic democracy, brought about partly by a perceived lack of accessible national monetary governance, generally neglect these internal currency institutional decision-making processes in favour of distribution concerns (D'art, 1992, Ringen, 2004, Fotopoulos, 2005, Blasi and Kruse, 2006).

In general, the internal currency-specific governance processes most discussed in the literature involve decisions surrounding:

•seigniorage distribution,
•currency issuance, and
•currency backing.

In particular, former Federal Reserve Chairman Alan Greenspan (1996) defines **seigniorage** as the income obtained from creating the currency. **Issuing money** is the process of making currency available to spend either by providing credit or by directly spending money into the economy, while **backing** is the commodity or service for which currency may be redeemed at its face value, which serves to allow currency exchange as a last resort.

The aforementioned internal decision-making processes remain under-investigated from the perspective of established governance principles, namely transparency, accountability and participation. Monetary institutions vary internally in degree of transparency. Although the Federal Reserve, as with most central banks, does make the minutes of its FOMC meetings public, these decisions are made with very little transparency in terms of the actors influencing those decisions. Little accountability to the public is encouraged, due to the doctrine of independent central banking. Governments remain accountable to citizens for mitigating the effects of the economy on daily life, but have limited policy tools with which to work. Hutchinson's (2002) more holistic approach views money as socially constructed, echoing Dodd's view that money promotes both freedom and inequality, exploring monetary system accountability as an element of economic democracy. Yet discussions of economic democracy, as previously mentioned, tend to neglect the internal currency institutional governance, instead focusing on systems of management and distribution or profit sharing and Employee Stock Ownership Plans (ESOPs). This work uses the more financially

specific focus of Shared Monetary Governance (SMG) to encompass external regulatory influences, transparency, accountability and participation. Huber's (2000) advocacy of including civil society representatives in seigniorage distribution and currency issuance decisions, though emphasising distributional aspects of governance, nonetheless also shows how seigniorage, issuance and backing decision-making processes are a key part of monetary system accountability.

Seigniorage revenue distribution, along with the issuance of money, and currency backing is emphasised in monetary governance literature, as these three concerns relate directly to the process of money creation. Neumann (1992) discusses the relationship between inflation, inflation-based seigniorage revenue generation, and distribution of those revenues, but he neglects the decision-making process for seigniorage distribution which Huber (2000) stresses. Neumann and Huber agree on the importance of seigniorage to the issuance process in monetary creation based on the effects those seigniorage revenues can have, both on the initial creation of money, depending on how much income can be generated through currency creation, and on the subsequent value of that money. Both of those effects will in turn directly affect the issuance and potentially even the backing of a currency. Neumann contends that equity requires all currency users to be given an equal share in seigniorage revenues. Huber goes further by arguing that all currency users have an important stake in *how* such decisions are made, particularly in democratic societies. This concern for equitable and democratic processes is articulated explicitly by Johnson (1997) as a crucial part of the set of governance principles, making it imperative that access to seigniorage decision-making processes be taken into account. Seigniorage decisions form one key part of currency–specific governance, of which currency issuance decisions form the next key.

National monetary issuance decisions are made with no direct input from money users, despite being the most heavily affected stakeholders. Huber (1999) and Zarlenga (2002) agree on the need to regulate monetary issuance, emphasising transparency and accountability, but neglecting direct user participation. Hayek (1976), by suggesting the idea of private bank currency issuance, highlights the importance of creation and issuance of money, discussed by Fisher (1935), Rothbard (2002) and Rousseau (2006) from a banking perspective and by Kennedy (1995), Gesell (1906) and George (1879) from a money reform perspective. These discussions of currency governance, however, focus on economic function and distribution, de-emphasising the processes of currency user access to institutional decision-making. Although currency backing decision processes are interrelated with issuance of money, backing, discussed next, requires a separate set of decisions with separate consequences for various currency stakeholders.

Choice of backing is also a key currency decision in which users of national money do not participate. Ardron and Lietaer's (2006) conception offering currency users a choice of backing highlights this neglected aspect of internal monetary governance. Keynesian economists argue that **fiat money**, i.e. currencies that are created from nothing and backed by faith in the issuing authority, allows more options, for instance, for running deficits (Miller, 2004). Yet fiat currencies may also limit stakeholder ability to influence the functioning of money, since currency users have no choices for redeeming fiat money, whereas commodity-backed currencies may allow stakeholders more redemption options. Community-based currency advocates Linton (1994) and Cahn (2006) assert that small scale currencies allow greater stakeholder decision-making input by facilitating direct participation in the currencies.

Table 2.4: Decisions in Currency Institutional Governance

	Time frames for circulation (based on external regulations)	Currency specific internal decisions	Functional scale	Geographical scale
	1.specific/limited 2.unlimited	1.seigniorage 2.issuance 3.backing	1.UoA 2.MoE 3.SoV 4.MoP 5.convertibility	1.neighbourhood 2.city 3.region 4.nation 5.supra-national
Literature	Institutionalisms	Fragmented literatures	Conventional economics	Community currency advocates

Table 2.4 summarises key decisions which must be made regarding currencies, as those decisions are emphasised by the various literatures in discussing monetary governance. North (1994) is a prominent voice from the perspective of Institutionalism arguing for the importance of time lines, history and the culture of each institution as a significant factor in economic governance, or which monetary governance plays a crucial role. Many different literatures discuss the specific internal decisions around currency which must be made by institutional decision-makers. Money specifically requires decisions about seigniorage revenues, the issuance of the currency, and its backing, all of which have been mentioned previously in this thesis. While these currency-specific concerns are discussed in a wide range of literatures, the functions of money tend to be discussed primarily by conventional economists, while the concept of currency limitation to certain geographical areas tends to be discussed mostly in the context of community-based currencies. This work attempts to draw together these disparate literatures in order to create a picture of overall stakeholder voice in currency governance.

2.5 Currency Scale: Functions and Geographical Range vis-à-vis Shared Monetary Governance

The next section explores how different literatures understand the third influence on monetary governance, namely the currency functions vs. circulatory range, and how these affect and are affected by external and internal decision-making processes[5].

Societies and their economic institutions at supra-national, national, and local levels have issued currencies, as Polanyi (1957) points out, in many forms throughout history. Traditionally there has been no consensus over what should be the optimal geographical scale and function of a currency. Huber's (2000) national level seigniorage reform suggestion contrasts with the small scale governance approach taken by Gesell (1906). Gesell's argument for functional separation as a way to overcome the hoarding induced by the use of money as a Store of Value (SoV) was praised by Keynes (1936) and advocated by Fisher (1933). Gatch (2006) and Greco (2001) similarly explore how locally circulated 'scrip' currencies, exchanged for farm produce and other goods during the 1930's in the USA and Worgl Austria, separated currency functions. Seyfang (2006a) however, applies local sustainable development perspectives to currency design objectives, pointing out that local needs may also affect governance at higher levels. Thomas (2004), furthermore, notes that currency design and the functions which a currency emphasises depend heavily upon the goals of the institution issuing the currency. Yet Freidman (1972), Greenspan (1996), and Hayek (1976) agree that external Regulatory Frameworks, taken for granted by Lipsey (2007), can override internal currency governance. Since Mundell (1961) and Boyle (2003) show currencies to function differently in different regions due to the effects of geographical scale on monetary functionality, separate governance mechanisms could allow more stakeholder control over local monetary priority setting. In this light, it is necessary to examine the role of monetary functions and geography in more detail. These are the two dimensions of what is summarily defined as **currency scale,** which are examined below.

2.5.1 Currency Functions: The First Dimension of Currency Scale

Currencies can fulfil one or many functions. Each currency function affects monetary governance differently, as Keynes (1936) asserted, showing how conflicting Medium of Exchange and Store of Value functions affect national currencies. Indeed, Polanyi (1977) asserted that there were two

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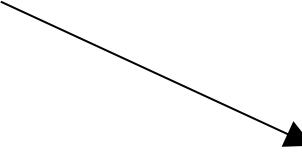
[5] For clarification, Table 2.5 will shortly show how functions and geography influence scale, and thus SMG.

distinct categories of money based on the number of functions the currency fills: General Purpose money and Special Purpose Currencies. Different currencies were used for different purposes. General purpose money refers to money used as a Unit of Account (UoA), Medium of Exchange (MoE), **and** Store of Value (SoV). By Polanyi's definition, currencies which do not perform **all three** of these functions are Special Purpose Currencies (SPCs). Furthermore, while state or local authority acceptance of a currency for payment of taxes and fees or fines can encourage the use of that currency, as Miller (2004) and Douthwaite agree, nevertheless such acceptance did not change the functions of those currencies. Cases where SPCs have been accepted as a Means of Payment (MoP) by local government authorities, cited by Douthwaite (1996), North (2007) and Gomez (2008), such as Worgl, Austria, Salta, Argentina, Auckland NZ and Venado Tuerto, Argentina did not change the functional emphasis of those community-based currencies significantly enough to make them widely used for all three key functions of accounting, exchange, and long term storage of value. Table 2.5 illustrates currency scale by function and geography.

Table 2.5: Currency Scale by Function and Geography

SPC							
		Geographical Scale					
		Local	**City/county**	**Region**	**Nation**	**Supra-national**	
	Smaller scale, more user control						
Functional Scale	**SoV** **Convertible**				Larger scale, less direct currency user control influence		
							General Purpose

Polanyi (1977) saw national currencies as a form of general purpose money because it fills the three functions of UoA, MoE and SoV. Melitz (1970), in contrast, argues that notes and coins, by their nature limited to hand-to-hand transactions, differ from checking and savings accounts and thus constitute SPCs rather than general purpose money. Nevertheless, Melitz under-emphasises convertibility between forms of modern national money which Dalton (1965) and Codere (1968) agree make it general purpose. Miller (2004) concurs that the MoP function, by generating a guaranteed requirement for the currency, does stimulate circulation, mitigating regional impacts of instability, but reiterates Codere's (1968) warning that currency functions, through emphasising credit, exchange, or stored value over time, affect stakeholders differently. To assist the reader through this material and provide illustrative examples, Table 2.6 provides an indicative typology of how the various monetary functions affect currency decision-making in different ways depending

on the function emphasised by the particular currency. How these functions are discussed in the literature is given in more detail next.

Table 2.6: Indicative Typology of Currencies Based on Predominate Functions

Monetary Functions filled :	Time Banks	L.E.T.S. and other MCS currencies	Worgl, Austria (1932) scrip	USA 1930's Stamp Scrip	National currencies
UoA	Secondary	Primary	Secondary	Secondary	Primary
MoE	Tertiary	Secondary	Primary	Primary	Primary
SoV	Primary				Primary

2.5.1.1 Unit of Account function

The UoA function manifests through prices. Every currency acts as a UoA, but Mutual Credit Systems (MCS) currencies, in which money, by crediting an agreed upon price into the account of the seller from the account of the purchaser, is created as Harris-Braun (2006) describes, 'at the point of transaction'. MCS currencies tend to emphasise the UoA function, with members extending one another credit in paper or electronic accounts by trading goods or services. Douthwaite (1996), Kennedy (1995), and Primavera (2001a) discuss the well-known MCS currencies Local Exchange Trading Systems (LETS) and the Swiss WiR. Such currencies, by allowing users to issue the currency directly, leave money-creation decisions to currency users rather than central banks, which also often results in price and circulation instability which affects currency viability. Lee (2004) and Douthwaite (1996) warn that currencies with no circulation oversight can be especially vulnerable to instability. On the other hand, the current economic crisis demonstrates that central bank oversight, while limiting currency user input, also does not guarantee monetary stability. Therefore price and credit stability although functional in nature is clearly a stakeholder governance concern.

2.5.1.2 Medium of Exchange function

Jackson (1997) finds that the unlimited ability of currency users to issue money through such complementary currencies as LETS often results in currency over-issuance, which in turn leads to circulation problems. Seyfang (2001) and Davis (1987) on the other hand, find that despite over-

issuance problems, community-based currencies boost local economies. Rothbard (2002) for instance blames over-issuance for the collapse of the "Continental", the currency issued as the USA's first national Medium of Exchange (MoE) at the founding of the new republic. Rousseau (2006) likewise focuses primarily on over-issuance of the Continental, although Desan (2005) blames backing for the Continental's demise. While Primavera (2005) asserts that over-issue caused the sudden collapse of Argentina's Red Trueque system, a particularly large scale non-national MoE, North (2007) counters that external hostility toward the system as it grew in scale was a significant influence in its demise. Indeed, MoE emphasising currencies which limit circulation, such as the community-based currency in New York state known as 'Ithaca Hours' described by Mascornick (2007), do tend to be more stable. For this reason Lee (2004) emphasises the need for currency participants to understand monetary fundamentals if they are to make issuance decisions. Given that issuance affects monetary exchange and thus heavily affects its value, it is important to discuss the third function of money, namely Storage of Value (SoV).

2.5.1.3 Store of Value function

Value can be stored as money, or stored in a commodity such as gold or diamonds. Gesell (1906) argued that the SoV function when included in a currency encourages hoarding.[6] Le Blanc (1998) draws connections between the work of Keynes and Gesell which Greco (2001) agrees show many examples of stamp scrip as a successful MoE, but with no SoV function. Removing the SoV function leaves a monetary niche which is filled by Time Bank currencies, the most well-known currency to emphasise this function. Time Banks use hours as the standard unit of currency, recording each member's account deposits and withdrawals for services rendered to or accepted from other members of the community, with goods increasingly being traded in this way as well. Seyfang (2006b) asserts that Time Bank currencies are an effective SoV, with Collom (2007) listing Time Banks as the most wide-spread community-based currency. Although Lee (2004) points out that an hour is worth more or less at different times and depending on the task, one hour never loses

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[6] Gesell suggested a usage charge on the money itself to prevent such hoarding. Planes joins calls for 'demurrage' charge implementation, quoting Lietaer and Primavera on artificial scarcity through the SoV function if the currency maintains equal or higher value in the future. Greco claimed success for demurrage arguing that 1930s stamp scrip in the US and in Worgl, Austria, was effective in speeding the circulation of local currencies. Planes, E.V., (2003). La Economia Social En El Proyecto Bolivariano: Ideas Controversiales. *Economia y Ciencias Sociales,* 9**,** 111-143. Lietaer, B.A., (2000b). *Community Currencies: A New Tool for the 21st Century* [online]. http://www.appropriate-economics.org/materials/21stcent.html [Accessed 22 May 2007]. and Primavera, H., (2001b). La Moneda Social Como Palanca Del Nuevo Paradigma Económico *In* P.D.S.-E. Solidaria (ed.) *Encuentro de Findhorn, Cuadernos de Propuestas de la Alianza para un Mundo Responsable.* Argentina: Fondation Charles Léopold Mayer pour le Progrès de l'Homme Alianza por un mundo responsable, plural y solidario. Greco, T., (2001). *Money: Understanding and Creating Alternatives to Legal Tender* White River Junction, VT: Chelsea Green Publishing Co.

its value as an hour. While time may allow storage of monetary value in a community where stakeholders know and trust one another, larger scales may inhibit the trust necessary for retaining that value over longer time periods and geographical distances. Turning next to the question of geography as it influences scale will round out the discussion of how scale influences monetary governance decisions.

2.5.2 Geographical Range: The Second Dimension of Currency Scale

Monetary function influences both national RF treatment and decision-making within currencies. While discussing J.S. Mill's dislike of multiple currencies due to accounting difficulties and currency exchange, the issue of interaction between function and geography prompted another Nobel Prize winner, Robert Mundell (1961), to observe that "the optimum currency area is not the world".[7]   Boyle (2003) cites Mundell (1961) in asserting that the geographical effects of currency function change from region to region, advocating different currencies for different regions, in accord with Noyer (2006) and Munchau (2006) who both acknowledge that price inflation affects currency stability as a Unit of Account (UoA) differently in different regions.

While non-national currencies have little macro-economic impact compared to national currencies, DeMeulenaere's (2006) database of non-national currencies shows over five million world-wide users. Indeed, Jayaraman (2005) asserts their lack of macro-economic impact to be an asset, since it allows community-based currencies to be used to unambiguously signal demand for local products while Schraven (2000) finds that smaller scale currencies build social capital. North (2005) and Grover (2006) point to the small scale of community-based currencies as a problem which Seyfang (2001) disputes, pointing out that local priority setting may be inhibited by large scales. Aldridge (2002) and Davis (1987) concur, finding that currency function at the local level depends on local decision-making, while North (2002) describes how exchange disruptions caused by large usage

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[7] Buiter and McKinnon are among the many who have applied Mundell's groundbreaking optimum currency area theory. Mundell discusses the optimal geographical area for a currency, arguing for flexible exchange rates among currency areas rather than among national currencies. Buiter, W.H., (2000). Is Iceland an Optimal Currency Area? *In* E.D. Central Bank of Iceland (ed.) *WORKING PAPERS No. 10.* Mckinnon, R.I., (2004). Optimum Currency Areas and Key Currencies: Mundell I Versus Mundell Ii. *Journal of Common Market Studies,* 42**,** 689-715. Mundell, R., (1961). A Theory of Optimum Currency Areas. *The American Economic Review,,* 51**,** pp. 657-665.

increases in turn created difficulties both for users of the currency and for those involved in making decisions about how to administer the currency. These problems brought on by the influence of the geographical circulation on currency institutional decisions confirm that interactions between the functions of money and geographical range of circulation also impact currency governance. As Boyle and Mundell point out, incompatible regions which share a single currency will see the competing needs of those regions affecting governance of the currency. Those decisions, which in turn affect currency users in some regions more adversely than users of that same currency in other regions, could potentially be made at levels closer to the affected users themselves if incompatible regions had separate regional currencies. Interconnection between currency institutions at various levels, as suggested by Fung (2001), could allow for coordination between various parts of the monetary system, and cooperation at local, national and also international levels. Such potential layering of various levels of currencies will be discussed further in Chapter 7 in the broader context of stakeholder empowerment.

2.6 Conclusion

Currency stakeholders, including external regulators, internal decision-makers and currency users, are affected by currency governance, but there exists no clear model for what shared decision-making among all stakeholders might look like. Stakeholders include regulators, currency organisers, producers and consumers who use money. While those who wield external structural influence over the governance of money such as states and bankers tend to exclude consumers from monetary decision-making, consumers, as currency users, are fact in key stakeholders who most likely have produced the very value to which that money allows access. Indeed, the Polanyian re-embedding of currency decision-making within small scale socio-economic spaces such as communities or even local businesses may facilitate greater access by all currency users to both monetary decision-making and distribution. While money interacts with other parts of the economic system such as production, distribution and consumption, the role of stakeholder decision-making in money remains under-investigated. Applying a governance approach to understanding monetary governance illuminates the potential of (and problems with) stakeholder access to currency institutional decision-making processes. However, problems raised by research on non-national currencies indicate the need to distinguish regulatory issues from scale issues. Thus, a re-conceptualisation of monetary governance which places stakeholder access at its core is necessary, with the caveat that it must be analytically capable of separating regulatory issues from scale issues. This work addresses that need by offering a holistic framework to capture the potential

for Shared Monetary Governance of any given currency. Functional aspects of decision-making common to all types of currency institutions, such as the ability to either spend or boycott the currency, can be measured next to participatory governance aspects, which may allow optimal popular influence on monetary governance. Against this background, we will explore the following research questions:

- How can the potential for stakeholder influence over monetary governance be theoretically explored?

- How can the potential for stakeholder influence over monetary governance be empirically explored, particularly across different types of currency institutions?

- Which combination of governance arrangements and currency functions allow for enhanced 'Shared Monetary Governance' (SMG)?

The following chapter deals with the first of them.

Chapter 3 - A Theoretical Framework for Shared Monetary Governance

3.1 Introduction

This work examines interactions between national RFs, internal currency institutional decision-making and scale, defined here as the functions of money at various geographical ranges. Previous studies of money have tended to emphasise economic functionality, while sociological approaches such as Buchan (1997), Simmel (1978) and Zelizer (1997) emphasise subjective meanings of money. The joining of stakeholder decision-making access with monetary scale is the intent of this thesis. External RFs influence all internal institution decisions, and thus all currency institutions, but particularly CCs, must adapt their internal decision-making processes to both external regulations and to monetary scale.

The study argues that a more integrative analytical framework is necessary in order to capture not only these different influences but also their interactions. To this aim the analytical framework of Shared Monetary Governance (SMG) is developed. At its essence, SMG refers to the potential of all monetary stakeholders to have meaningful input into the decisions regarding money which affect their lives. This work builds a theoretical framework for SMG which combines national regulatory influence with internal institutional decision-making processes and monetary functions, bringing together institutional relationships, currency functions and geographical range to understand the processes shaping monetary governance. From there, a methodology is constructed to measure the overall level of SMG for a currency. Shared Monetary Governance (SMG), formally defined here as the overall level of direct stakeholder control over a currency, and measured via the confluence of external influence, internal decision-making and scale, encapsulates all of these factors.

Table 3.1 shows three inter-related elements which influence SMG. Firstly, external policies, which include national and international regulatory frameworks as well as markets, but are limited in this case to national regulatory frameworks, shape internal monetary institutional decision-making. Regulatory frameworks affect both the governance and the functions of money at each geographical level. Such frameworks act as meta-governance influencing decision-making within currencies. Secondly, currency institutional responses to external incentives affect their tolerance by external regulators. Thirdly, scale influences both external and internal monetary governance. Monetary functions at different circulatory ranges impact currency stakeholders differently.

Regulations, internal practices, and scale will have different effects on the three main functions of money, UoA, MoE and SoV, which require exploration of shared governance for various types of money. Table 3.1 illustrates interrelated the Monetary Governance Processes.

Table 3.1: Interrelation of Monetary Governance Processes

Influences on Monetary Governance	*Monetary Governance Processes*
External Governance	**Toleration by National Regulatory Frameworks** for non-national currencies **(by indirectly affected stakeholders))**
Internal Governance	Participatory Internal Decision-making (**PID**) **(by directly affected stakeholders)**
Monetary Scale	*Currency **Scale** as percentage of **SPC*** Currency Users (no decision-making input) affected by the functions of money at various geographical ranges **(by directly affected stakeholders)**

For an alternative view of this table and Venn Diagrams, see Appendix 5.

This work will argue that currency governance must take into account the influences corresponding to three types of monetary stakeholder. The four previously discussed well-established governance principles of consistent regulatory framework (RF) treatment, transparency, accountability and participation are applied to each type of stakeholder in the context of all currency institutions. RFs external to currency institutions influence the governance of those institutions. Regulators are therefore indirect stakeholders in the governance of these currency institutions. Regulators are accountable to external bodies, but not to the currency institutions themselves nor to currency users. The second type of stakeholders in currency institutional governance are direct stakeholders who participate in internal decision-making. The third type, also directly affected but not involved in decision-making, are currency users. The power of each set of stakeholders is explored through the external governance, internal governance, and currency scale related processes. To facilitate this exploration, this study draws upon Polanyi's (1977) concept of SPCs as a useful tool for conceptualising functional aspects of money alongside governance. Polanyi listed the UoA, MoE and SoV functions as requisites for a currency to be considered part of the category of general purpose money, leaving other currencies to be classified as SPCs if they fill only one or two of those functions. Polanyi (1977) asserted that the limited functionality of SPCs allowed the decision-making processes around those currencies to be more fully governed by social actors
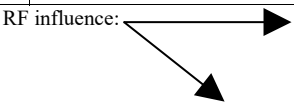
rather than by purely economic interests. While Polanyi investigated the social effects of changing currency function, as general purpose money came to be more widely used, stakeholder access to currency governance processes remains under-investigated. The approach taken here is necessarily limited in scope to the exploration of some of these governance processes. The unit of analysis is currencies, in terms of SMG, influenced by national RFs, internal governance and scale for each currency. Operationalising details are explained later, in the methodology chapter.

3.2 Predictable and Fair Legal Frameworks: How National RF Toleration Influences SMG

"Only an accountant could get Al Capone" –famous IRS recruiting poster

Shared Monetary Governance (SMG) applies governance principles to currency decisions by examining regulatory treatment, transparency, accountability and participation for all stakeholders. The application of those governance principles to currency institutions requires the exploration of the effects of both national regulations upon currency decision-making, and the levels of transparency, accountability and participation in internal decision-making regarding currency-specific decisions, namely seigniorage, issuance, and backing, as illustrated in Table 3.2. Keeping in mind the potentially overwhelming influence of national level RFs, as the US Internal Revenue Service proved in the case of famed gangster Al Capone, these decision-making processes are also strongly influenced by the scale of the currency, and therefore scale must be taken into consideration when investigating the governance of any currency institution.   Applying these in a monetary setting, currency institutions are explored in the context of full stakeholder access to monetary decision-making processes.

Table 3.2: Influence of Currency Institutional Governance Processes on SMG

Influence of Currency Institutional Governance Processes on SMG:	*External Regulators as* **Indirect Stakeholders** **Toleration by National Regulatory Frameworks** for non-national currencies		*High Potential SMG*	*Internal Decision-makers as* **Direct Stakeholders**
RF influence:			+	**PID**
	High RF Toleration varies SMG	(1,1) High PID, SPC		*Currency Users* (with no decision-making input) as **Direct Stakeholders**
	Low PID, Large Scale Money	Low RF Toleration (varying effects on PID, Scale)		
Low Potential SMG:	(0,0)			**Functions of Money at user controllable Geographical Ranges**
	-			

3.2.1 How RF Responses Influence Currency Decision-making

Currencies may simply be prohibited out of hand by banning the use of all non-national currency transactions, or they may be discouraged indirectly by requiring full convertibility to a national currency. Tax and benefits agencies can also discourage wide participation in lower income brackets by withdrawing welfare and tax benefits from users of local currencies, leaving innovative currency institutions available only to the middle classes (Anonymous, 2007). In this way such regulatory responses affect both functional viability and internal processes of currency institutions either directly, by discouraging full participation in these institutions, or indirectly by limiting circulation and value of the currency. Consistent treatment by national RFs toward differing types and scales of currencies is one key measure of SMG, since national RF policies shape the governance of all currency institutions. The previously discussed well-established governance principle of fair and predicable RFs is applied in this case to national monetary governance in the USA. Comparing RF tolerance levels with overall levels of SMG illustrates how US RFs respond to changes in currency institutional decision-making processes.

National RFs shape both general monetary and SPC governance. Galbraith (1975) decried measures such as banning gold contracts, which allowed national money to fulfil more functions, though most economists agree with Mundell (1998) that centralised money decreases transaction costs, allowing more efficient trade. National monetary monopoly and supra-national monetary unions prioritise efficiency but neglect the concentration of monetary functions which Keynes, Gesell and others have pointed out encourages hoarding, leading to monetary instability. From a stakeholder perspective, national currencies may inhibit priority setting by affected communities, since national RFs can only set policy at the national level based on overall national priorities, given the nature and needs of centralised government constituencies. For this reason, Fung and Olin-Wright's (2001) advocacy of local level participatory policy-setting highlights an important concern for stakeholder access to currency institutions. Participatory decision-making processes encourage transparency and accountability by requiring information sharing and debate among included stakeholders. Thus while centralised institutions may inhibit stakeholder institutional access, participatory decision-making may facilitate greater access for all stakeholders. However, the effects of RF tolerance on SMG require all three factors of SMG to be compared. Analysis of data for Regulatory Framework tolerance toward different currency institutions, participatory internal decision-making and scale examines the role of all three factors of SMG.

To conclude this section, national RFs in general influence all other external governance mechanisms, such as business chambers of commerce, employers, international regulatory frameworks, and other forces outside of the currency institution which shape the internal processes and scale of all currencies, general and special purpose. Different levels of regulatory tolerance can push currencies in different directions, and national RFs are more likely to favour national currencies due to the close linkages between national sovereignty and national money. Since those RFs give preference to national money in part due to its nature as general purpose money, national money could thus potentially have lower overall levels of SMG. Consistent RFs are but one out of four governance principles upon which SMG is built. The remaining three principles of transparency, accountability and participation are operationalised through SMG by investigating internal decision-making processes and scale. Although these last three governance principles are encompassed by the internal decision-making processes of every currency institution, those very same internal processes are heavily affected by external RFs. Hence those processes are explored next.

3.3 Transparency, Accountability and Participatory Decision-making via Seigniorage, Issuance and Backing

Hutchinson (2002) criticises macro-economic theory, pointing out theoretical gaps in monetary governance, yet not fully emphasising participatory currency decision-making processes as they derive from those governance gaps. Likewise, existing analytical approaches have tended to explore either global political economic governance as Cerny (2005) does, or to focus on one narrow aspect of local currency functioning, leaving out currency-specific processes as they apply to all stakeholders. While the functions a currency emphasises do not have to dictate Participatory Internal Decision-making (PID) levels, functional emphasis certainly influences institutional decision-making processes. Existing approaches do not fully explore stakeholder influence on monetary decision-making, yet for this work, it was necessary to bring these functional concerns together within a governance framework. To explore these interacting systems of governance, the principles of consistent regulatory frameworks, transparency, accountability, and participation are applied to three key currency institutional decision-making processes: distributing seigniorage

revenues, issuing currency, and backing the currency. Only taken all together can an understanding be constructed of the level of SMG for a currency institution. Two of these four influences, transparency and accountability, are controlled more by internal institutional processes. The other two issues, legal frameworks and participation, are largely determined by the external RFs surrounding the currency institution and by the scale of that institution as they affect stakeholder participation. Sen (1999) points out that participation in decision-making is the right of **all** affected stakeholders, and SMG is a conceptualisation of overall stakeholder participation in the monetary governance process. Fung and Olin-Wright (2001) argue that community-based institutions facilitate participatory decision-making, with which Bohman (1997) concurs, arguing that stakeholders must be empowered to use information. Internal processes form the basis of institutional governance, but if implementation of those internal processes is obstructed by regulatory frameworks or by scale, then participation in decision-making may be restricted. Hence Regulatory Framework tolerance, internal decision-making processes and scale must be investigated together to understand the overall effect on seigniorage, issuance, and currency backing decision-making.

Applying the principles of transparency, accountability and participation to monetary institutions requires exploring how seigniorage revenue decisions are shared among currency stake-holders. Seigniorage decisions are pivotal in shaping currency institutional governance through both internal decision-making processes and seigniorage revenue distribution. Huber's (2000) advocacy of central bank distribution of those revenues acknowledges the "Constitutional Consensus" for shared benefit of common resources, but neglects the shared decision-making power also implied by that consensus. Private currencies in contrast, are accountable only to the private institutions which issue them, potentially limiting sharing of decision-making based on business priorities. Although loyalty seigniorage distribution decisions are made by the issuing firms, loyalty programs could be viewed as a means of sharing in issuance decision-making by encouraging members to buy according to shared priorities and normative values.

Issuance decision-making is a second key process operationalising transparency, accountability and participation in internal currency institutional governance. While national currencies are issued by independent central banks, the issuance processes of SPC institutions are heavily influenced by external RFs. This requires institutions to take into account and attempt to dovetail with those regulations and such accommodation may alter internal institutional decision-making. The three most common types of SPC institution emphasise the three main functions of money: UoA, MoE

and SoV. Mutual Credit Systems (MCSs) as credit based currencies may have difficulty adapting to limits on issuance (and on backing). Currencies which issue physical notes, such as Ithaca Hours or the older Farm Exchange Scrip currencies of the 1930's, have a more limited ability to issue currency than an MCS, but may be potentially more compatible with US national RFs. Time based currencies by contrast are based on mostly non-circulating media and may thus be naturally more difficult to regulate, whilst also avoiding overlapping functions with national currencies. Time Dollars are an example of such a currency, emphasising the SoV function over other functions, thus garnering issuance decision-making freedom. No matter which monetary function a currency emphasises, that function will significantly influence geographical circulation, in turn affecting issuance decision-making processes. SPC institutions which emphasise different monetary functions may also need different types of internal structures and interact differently with external RFs. This may lead to different potential levels of SMG for different types of SPC institutions based on their differing abilities to share currency issuance decision-making. Privately issued currencies in particular may allow little currency user decision-making, as they are obligated to prioritise profits. On the other hand, loyalty currency issuance can be partially construed as shared based on purchase by consumers. This nonetheless lacks full participation since decisions and terms of issue are fixed by the issuing firm.

Choice of backing is the third key influence affecting transparent, accountable and participatory monetary decision-making, the need for which Jessop (1999) emphasises, particularly transparency and accountability, in monetary governance. Backing decisions shape the internal processes and shared governance potential of all currency institutions. Commodity-backed currencies may facilitate a form of participation in backing decision-making since a variety of commodities can be offered for currency redemption. Fiat currencies like credit based UoA emphasising forms of money (i.e. MCSs) may be more limited in their redemption options. Despite the functional difference between commodity-backed money and fiat money, both types of money have been used for general and special purposes. Economists frequently discuss the ramifications of commodity vs. fiat money from a monetary efficiency perspective, since the commodity which backs a currency affects currency stability. However backing decision-making is also an important governance process. Therefore whether a currency institution offers currency users a choice of backing in which to redeem the currency is emphatically a monetary governance concern.

Transparency and accountability can be optimised for monetary institutions through participatory decision-making processes involving seigniorage, issuance and backing, subject to external regulation and scale in terms of both function and geography. The currency function an institution

chooses to emphasise affects the geographical circulation of that currency, which in turn affects internal institutional processes. Therefore the next section will discuss interactions between currency functions and geographical circulation.

3.4 Currency User Influence on Governance via Scale

Although functionality dominates monetary discussions, connections between governance and monetary functionality are largely neglected. Monetary function affects monetary stakeholders who therefore have a right to participate in monetary governance. Currency scale includes both Polanyi's (1957) currency functions and geographical circulation both within and outside of the nominal area for the currency, as Chinn (2005) explains. Scale affects decision-making in at least three ways which are relevant to this thesis. Firstly, the functional behaviour of money changes with geographical circulation. Secondly, scale (both functional and geographical) affects seigniorage distribution decisions (Neumann, 1992). Thirdly, geographical range affects direct decision-making participation potential for institutional stakeholders (Fung and Wright, 2003). Whether by adding more functional expectations to a currency, for instance by using the same currency as both a MoE and SoV as Keynes (1930), Gesell (1906) and Greco (2001) point out, or by increased territorial circulation, as seigniorage hearings before Congress (2000) illustrate, both technical functions and geographical circulation change the scale of the currency. Scale changes to a currency, including changes through convertibility between currencies, in turn affect issuance and sometimes backing decisions. Scale and governance are thus inextricably linked.

Functions of money, which most currency typologies emphasise, play the first key role in monetary scale. However this emphasis on function neglects the regulatory and internal governance context of currencies. Greco (2001) for instance suggests a backing-determined functionally-based classification system for local currencies. He discusses pure economic viability based on functional emphasis of various currencies, thus to some degree he does explore the difference between currencies which are convertible to national money, and hence more closely linked with general purpose money, but he does not elaborate on forms of governance within those currencies. For that reason his typology cannot be applied in this study. Dalton (1965) classifies various forms of money based on cultural context into Polanyi's Special Purpose Currencies (SPCs). As discussed previously, SPCs are classified as such because they do not fill all three of the following functions: UoA, MoE and SoV.

The greater number of functions filled by general purpose money may increase the difficulty of sharing decision-making around disbursement of seigniorage revenues, currency issuance, and backing choices. UoA emphasising currencies, as the most limited scale of all currencies, would be expected on these grounds to have the highest levels of shared internal decision-making. Internal processes must also vie with external regulations for influence on SMG within a currency institution. Function shapes both internal institutional governance and the ability to link with external institutions. Functional emphasis may also influence motivation and values of objective setters within institutions. All of these issues affect internal decision-making.

Geography plays the second key role in monetary scale, delimiting currency circulation ranges. The walking distance limits of a local neighbourhood might be at most 5 miles across for most fit people. Many LETS users for example have commented that such range limitation was an important component of trading. The next logical step is a city-wide circulation range. The third would be regional, such as the Pacific North West in the USA, while the fourth range could be the national boundary. The fifth and final range would be that of the supra-national and international circulation range, such as the Euro, or the US Dollar. The wider range of circulation a currency has the greater will be the impact on its governance.

Special Purpose Currencies (SPCs) include transferable currencies which act as a MoE but are not used to store future value, and currencies which hold future value, but do not circulate as a MoE. Privately issued currencies can also circulate as a type of complementary currency, filling UoA and either the MoE or SoV function, being transferable within a limited user group, redeemable for goods and services with an expiration date, or other exchange limitations. Since such SPCs are privately controlled, and can limit circulation by redemption eligibility or by geographical boundaries, clearly not all SPCs will have a high degree of SMG.

3.4.1 Convertibility and Scale

If convertibility between local and national currency influences functionality, then it influences scale as well. Fluctuations in national monetary value will have disproportionate impact on convertible local currencies, impacting circulation. Gomez (2008) emphasises the importance of open convertibility between community and national currencies. This trait can be partly used to

determine if a currency is general or special purpose, since the ability to exchange or convert between currencies links them more closely. For this reason, convertibility is weighted more heavily toward the general money end of currency scale. When such convertibility is mandated by national RFs, a direct effect on the currency will be to keep that currency legally viable. On the other hand, possible secondary effects of this price of RF toleration include some loss of currency users' ability to choose the backing in the case of fiat a currency and indirectly less user control over currency decision-making.

National currencies and larger scale community-based currency institutions were initially hypothesised to be better tolerated by national RFs, due to the connection between general purpose money and markets which national RFs oversee. Scope limitations prevent a large-scale study from being undertaken, but this theoretical and methodological framework may be applicable to many more cases. National RFs in the USA classify credit based UoA currencies such as LETS as barter and for this reason LETS are not studied here.

3.5 Conclusion

The concept of SMG forms part of a growing literature related to the governance of money at community levels, and can be applied across different time frames and locations. While limited scope prevents the addition of further currencies from other nations in this study, it fills part of the gap mentioned by Hutchinson (2002). The first part of SMG entails the consistent treatment by national RFs vis-à-vis both national and non-national currency institutions. The extent of a currency institution's ability to facilitate access to decision-making for all stakeholders may depend on the level of national RF tolerance. RF tolerance is measured by equating more participatory processes with higher degrees of shared governance. The second part of this theory explores internal monetary governance. Non-national currency institutions are viewed here as small scale and potentially more participatory structures. Participatory Internal Decision-making criteria are developed to determine if such institutions deliver greater accountability and transparency to users of local currencies. Participatory Internal Decision-making (PID) is measured by the level of community accessibility to participatory decision-making processes which are crucial to monetary governance, namely seigniorage, currency issuance, and backing decision-making. The final part of SMG recognises the importance of scale, which Table 2.5 showed is comprised of both the functions of money and geographical circulation, as a crucial influence on currency institutional governance. Two key concerns make the scale of SPCs important to monetary governance, and

they are: firstly that the smaller number of monetary functions fulfilled by SPCs affect currency decisions differently than monetary institutions which issue currencies that fill more functions, and secondly that smaller geographical range may allow greater levels of participatory decision-making. Both of these concerns underline the importance of scale to shared governance.

The research questions listed at the end of Chapter 2 turn on the interactions of external and internal governance with scale as they influence overall Shared Monetary Governance. Clearly, external governance and functional factors interact with internal monetary creation decision-making processes across geographical boundaries, raising questions regarding the extent to which any existing currencies fit the criteria of Shared Monetary Governance. Based on theoretical and empirical exploration, SMG seeks to provide a measure of that potential for all stakeholders to influence currency decision-making, wondering as a by-product of those main questions:

- To what extent, if any, does institutional sponsorship affect levels of RF Toleration, PID, scale, and in turn, overall SMG?

- To what extent, if any, does scale determine the degree of SMG, and do the smallest scale currencies necessarily have the highest levels of SMG?

In conclusion, the governance principles of consistent regulatory framework treatment, transparency, accountability and participation as applied to all stakeholders who are affected by monetary functionality requires investigation of the processes used to make decisions in monetary institutions. Since no such dual-paradigmatic investigation has been undertaken, this study asserts that metrics for such an investigation need to be developed. This study initially hypothesised that small scale currency institutions, more so than general purpose money, better facilitate participatory stakeholder decision-making. Yet loyalty programs, where they are transferable, generally have limited use as money, hence are also SPCs, creating a paradox in which small scale currencies in fact turned out to allow currency users *less* decision-making power than users of large scale general purpose money, since decision-making for loyalty currencies can be limited to owners of business institutions issuing the currencies. Therefore, while both community-based SPCs and privately issued SPCs could potentially address the lack of user decision-making influence in monetary governance (by facilitating greater institutional access), a measure of such access is important in establishing criteria for full Shared Monetary Governance and what types of institutions actually facilitate greater levels of SMG overall, and Participatory Internal Decision-making in particular.

Chapter 4 - Methodology

4.1 Operationalising the Theoretical Framework

In contrast to trade-offs between stakeholder priorities and Pareto economic efficiency discussed by Hansson (2004), this theoretical approach treats monetary governance and functionality as interacting systems. Three main monetary stakeholder influences explored in this study are monetary regulators, internal currency decision-makers and currency users. Currency institutional decision-making adaptations to regulatory influence and monetary function at different geographical ranges must be understood within the context of governance. While currency institutions can adapt to external Regulatory Framework (RF) requirements by shaping their internal processes in ways which allow them to retain shared decision-making, these governance factors also affect functional-geographical scale. A process based typological methodology for evaluating Shared Monetary Governance (SMG) is developed based on national regulatory treatment, internal decision-making and scale for each currency.

This chapter discusses methodological challenges encountered during this study, Ragin's (2000) Fuzzy Set-QCA technique which inspired this methodology, and methodological modifications made for this study. Influences that needed investigating are then discussed followed by data sets. Finally, reasoning behind the scoring system and analysis of the processed data is explained.

Three main challenges were encountered in categorising currency institutions while retaining stakeholder context, focusing on decision-making. First, as both Schroeder (2005) and Schraven (2000) note, there is little empirical data available to researchers for non-national currencies. Second, Dow (2003) and Heinrich (2004) stress the importance of balancing individual institutional context with cross-system comparability in conceptualisation. These complex process interactions required methodological framing which allows for consideration of internal institutional processes against a backdrop of external influences, each of which could change with scale. The third methodological challenge, timing, was framed against North's (1994) contention that history shapes institutional development, making time frames important in judging institutional processes, exacerbating the difficulty in finding comparable data sets.

4.2 Justifying SMG Criteria and Scoring

The methodology of this work is the first attempt to classify currency institutional governance while taking into account both the institutional context of governance and functional impacts on SMG. Accomplishing this required creating criteria which allow comparison across different types of currency institutions. Each set of criteria is derived from discussions in the literature, with individual indicators drawn from the various debates surrounding monetary governance and functionality.

4.2.1 Justifying National Regulatory Framework Criteria and Scoring

Measuring external, in this case national, RF tolerance for currency institutions is the first part of this methodology. Heinrich (2004) concurs with Jessop (2002) on the importance of external factors to internal institutional governance structures. National RF tolerance for currency institutions is evaluated here on a spectrum of enforcement which takes into account variations in regulatory policies. That enforcement flexibility was captured by using percentages between the two main sets of Fully Tolerated and Not Tolerated. In order to facilitate analysis and comparison with other data sets, those scores falling between the two sets were placed along a spectrum from least to greatest restriction. Levels qualified as more tolerated if the Score is above 50%, while a greater number of criteria are met below the 50% threshold results in a qualification of Less Tolerated.[8] As RF Tolerance is quite straightforward, the individual indicators are described with their scoring methodology in section 4.4.3.

4.2.2 Justifying Participatory Internal Decision-making Criteria and Scoring

Participatory Internal Decision-making (PID) operationalises the concepts of transparency and accountability, drawing on Fung's (2003) work in participatory decision-making processes. The concerns of seigniorage, currency issuance, and currency backing guide the direction of currency governance and functioning. Each section (seigniorage, issuance and backing) allows a range of scores based on how decisions are made, from one for the most limited participation to five for fullest participatory decision-making. Thus there are a total of 15 criteria in total used to determine the PID score for a given currency, which then contributes to the overall SMG score for that currency. Scoring details are shown in greater detail beginning with Table 5.5 in section 5.2.1. The

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[8] For technical details regarding RF scoring, see Appendix 1.

criteria permitting the greatest level of direct participation in decision-making processes received the highest scores. The upper range of scores is extended by the fact that it is possible for a currency institution to use more than one of the selectable options, resulting in greater flexibility for PID, and thus a higher PID score.

While Rolnick (1989) down plays the importance of seigniorage revenues, Huber (2000), Linton (1994) and Neumann (1992), though neglecting shared decision-making, disagree with Rolnick, agreeing that seigniorage plays both a governance role and a functional role in currency institutions. Seigniorage revenues reinvested as shareholder dividends are effectively spent by shareholders rather than by all of those people who use the currency. Seigniorage revenues split with National Treasury gives somewhat more public choice via a presumptive democratic process. Since democratic states have elected representation to voice governance concerns, national currency seigniorage decisions are expected to be shared to a greater extent than those of loyalty currencies. Seigniorage revenue *distribution* among currency holders benefits currency users, but neglects the impact on affected communities. Admittedly, seigniorage revenues donated to charity are a form of distribution rather than participation. Nevertheless, if those revenues are donated to a charity which serves the local community, they can act as a form of community empowerment, spreading among more stakeholders than when revenues are not shared within local communities. Finally, seigniorage revenues invested in the local community allow greatest participation in the decision-making process by all monetary stakeholders.

Likewise, the widest possible participation in deciding how money is issued allows the highest level of PID. Money issued by Private Firm or Individual without public consultation, input or representation neglects stakeholder priorities. When issued by National, supranational or international Governmental Authority, monetary institutions may claim representation, but currencies issued by publicly chosen or elected local authorities give wider participation in the issuance decision-making process. Going further, money issued by an open management committee of Community, Civil Society Group or local business may be more open to involvement by those directly affected by the currency. Finally, currency issued by open vote or by consensus of community or Civil Society Group allows fullest participation and transparency, since any member of the community can enter the open meeting and give input. Although informal barriers such as English language skills in the USA can be significant, those barriers are beyond the scope of this study.

Justifying the choice of backing scoring was the most complex of all the PID criteria. Several issues affect the scoring for shared choice of currency backing as part of internal governance. Both commodity or cash redemption choice and full user decision-making participation offer the most accountable form of governance and choice for both users of the currency as well as those who may not use the currency but are still affected by it. Fiat currencies, by their lack of backing, may offer less choice than commodity or hard cash backed forms of money. The means by which crucial backing-related decisions are reached is just as important to making the governance of a currency fully open. Hence a scoring balance was needed between commodity-backed currency, which allows users wider redemption choices, and fiat currency, which cannot be redeemed for commodities. While commodity backing allows wider redemption choice, fiat currencies with fully open participatory decision-making processes allow greater choice than commodity backed currencies with no user decision-making input. Thus currencies with a choice of either commodity or hard cash backing where the currency committee was run by open consensus receive the highest score as more open to participation and transparency in the decision-making processes.

Gomez (2008) points to active direction of currency institutional long-term strategy as crucial to institutional viability, but it also, if guided through consensus-based direct participation, automatically puts a currency in to the set of Participatory Internal Decision-making currencies because direct participation allows greatest stakeholder access. For similar reasons, a negative score for PID was included to allow for currencies such as the 19th century railway wage vouchers in which workers were paid during the 1890s. Railway Scrip currencies illustrate the effects of coercive internal processes on governance. These currencies, while clear examples of SPCs, nonetheless had a very low degree of PID. Furthermore, they were tolerated by national authorities despite the coercive and exploitative nature of these currencies. Such currencies would therefore warrant a PID score low enough to outweigh those external and scale factors, given the harsh effects on currency users[9].

4.2.3 Justifying Scale Criteria and Scoring

Scale, which is the third piece of this methodology, determines currency users' ability to directly control money through counting, spending or saving with the currency. While choice of backing is a governance issue, backing and also exchangeability as Chinn (2005) asserts, touch on functional issues. Loyalty currencies though special purpose, are also linked to general purpose money. For this reason, a method was needed to measure currency scale by function and by geographical

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[9] This will be further explained in section 5.2.1.

circulation. This allowed currencies from either extreme of scale to be graded as general purpose or special purpose, and all remaining currencies to be somewhere in between, using a combination of Polanyi's (1977) SPC functions criteria and geographical criteria.

There are five criteria, as the reader will recall from Table 2.5, which determine the vertical component of the scale score, placed along the functional criteria axis. The first three are the functions of UoA, MoE and SoV, which determine general purpose money. There are, of course, overlaps in what may constitute a MoE or SoV, as with Time Banks for example. The fourth functional criterion is any Means of Payment (MoP) accepted by the state, although automatic passage to general money has been downgraded here because it is possible for a locally accepted MoP to still not be general money, as the reader will recall from section 2.5.1 of Chapter 2. The fifth and final function related criterion is that the money be convertible to either a national or supra-national currency.

Indirect convertibility through exchangeability with other convertible currencies creates closer links to general purpose money. These five criteria, in combination with the five geographical territorial ranges determine overlapping general or special purpose currency. This determines whether the same currency could exhibit a tendency to shift between general and special purpose depending on the RFs and internal processes. Geographical limits arise first in dealing with a Special Purpose Currency, and form the horizontal axis of the scale matrix, based on geographical distances. Nonetheless, it is possible for a currency to be widely accepted and yet remain special purpose rather than a full-fledged general purpose currency. Continuing up the geographical scale, regions of the USA such as the desert South-west, the South-east, North-east, West and Midwest are distinct from the City-County scale. Note that currencies can also perform different functions over very large distances, as illustrated by the world-wide acceptance of the US Dollar for accounting (UoA) purposes, but not for tax payment (MoP). To take this into account it was necessary to include criteria to distinguish circumstances under which currencies could flow between general and special purpose. Thus, scale scores are the sum of functional and geographical criteria.

4.3 Currencies and Institutional Influences

Notably, Kahler (2000) reaffirms the strong effect of external governance constraints even upon central banks, although states, civil society, and businesses remain key influences, as sponsors of currency institutions. Therefore in order to distinguish the various influences on governance processes, prominent examples of monetary institutions sponsored by national, civil society, and

business actors are investigated here. National RF differences among countries dictate that currencies from the same nations must be studied as a block. Hence four types of currency institutions from the USA were investigated: the national currency, two very different community-sponsored currencies, and one loyalty currency. Note again that community-based currency institutions are defined here as monetary institutions sponsored by civil society actors for the explicit benefit of local communities. The specific currencies reviewed were the US Dollar, Humboldt Exchange Dollars, Time Dollars and Deli Dollars. Each nation-state and some local authorities within nations oversee the issuance of currency and regulate issues connecting with money and its use. Therefore the authorities investigated included national currency regulators and state regulations affecting all types of money. Business associations were not included in the set of RFs despite having a potentially strong influence based on internal company procedures because these data are effectively already included, based on acceptance as a MoE, via the criteria used to score scale by function and geographical range.

Data for the national currency comes from secondary sources, while primary data gathered to document governance issues in SPCs was in qualitative format for each factor (RF tolerance, PID, SPC). Resulting data sets were analysed for trends in those areas. These institutional contexts were taken into account when examining the development of SMG. Thus, the overall SMG score is the sum total of national RFs, PID, and SPC percentage scores.

Fines and fees are an important part of the regulatory ability to create change in currency institutions. Previous research by North (2007) and others implied that national RFs were to blame for the failure of many SPCs, as punitive regulations seemed to strongly affect the governance processes with those currency institutions. Also of clear importance is the legality of non-national currency institutions, since what is legal in one place may not be legal elsewhere. This is partly dependent on US laws limiting circulation of tokens and prohibiting note issues of less than $1 USD in value. Solomon (1996) points to these in his discussion of the legality of SPCs but does not categorise US regulatory toleration. In classifying currency regulations and internal processes, the influence of external regulation was emphasised. The need for a standard template made some form of categorising necessary.

4.4 Data sets

The US Dollar, Humboldt Exchange Dollars, Time Dollars and Deli Dollars, as national, community-based MoE and SoV, and loyalty currencies respectively, were selected to test influences on governance by the different functions of money at various levels. The representative currency institutions were classified by RF treatment, Participatory Internal Decision-making and functional geographical scale. Data are based largely on secondary sources with some interview questions, as Table 4.1 shows.

Table 4.1: Data sources table

US National RFs	Solomon 1996 http://www.ustreas.gov/education/faq/currency http://www.treas.gov/press/releases/ls377.htm http://www.irs.gov/pub/irs-tege/gulc_governance_speech_042308.pdf http://www.house.gov/paul/congrec/congrec2006/cr021506.htm http://www.federalreserve.gov/generalinfo/faq/faqfomc.htm http://www.federalreserve.gov/aboutthefed/bios/board/default.htm http://www.ustreas.gov/education/faq/currency/legal-tender.shtml#q2
PID	Interview data http://www.humboldtexchange.org/faqs.htm http://www.timebanks.org/faqs.htm#bartering http://www.timebanks.org/documents/IRSRuling-TimeDollars.doc http://www.timebanks.org/types-of-time-banks.htm http://www.timebanks.org/documents/HowToManual.pdf http://www.smallisbeautiful.org http://www.berkshares.org
Scale	Chinn Interview data http://www.humboldtexchange.org/faqs.htm http://www.timebanks.org/faqs.htm#bartering http://www.smallisbeautiful.org/local_currencies.html

Governance data all last accessed March 2009

4.4.1 US National RFs

External (in this case, national) and internal governance of the US Dollar is intermingled due to its nature as the national currency. While the US Treasury Department (2008) now oversees distribution of seigniorage from United States notes and Federal Reserve notes, both of which remain legal tender, US notes were issued directly by the Treasury until 1971, with Federal Reserve notes issued through the Federal Reserve System. US Dollar issuance decisions are now made by the Federal Reserve's Federal Open Market Committee (FOMC), which coordinates US Dollar exchange rate policy with the Treasury Department. Although the FOMC's Board of Governors are presidentially appointed with Senate confirmation, their fourteen year appointments serve, according to the Federal Reserve Bank of New York (2008), "*to contribute to the insulation of the Board—and the Federal Reserve System—from day-to-day political pressures*". Despite this independence, as Paul (2006) points out, backing decisions by Presidents Nixon and Roosevelt

impacted stakeholders world-wide, making the US Dollar, according to the US Treasury (2008) a fiat currency, "not redeemable in gold, silver or any other commodity" i.e. with no backing.

4.4.2 Non-national currencies in the USA

Solomon's (1996) national legal data covering currencies in the United States remains the most comprehensive recent study, covering federal and state rulings in detail and is still widely referred to as an authoritative work. Citing the 1948 Congressional prohibition of private coinage, but not of small-scale paper currencies worth at least $1 USD, Solomon (1996) concludes that since 1977, US citizens have been allowed to trade in gold and to enforce gold clauses and therefore may now specify payment in any currency "*pegged to the US dollar*".

4.4.2.1 Humboldt Exchange Dollar Data

The Humboldt Exchange Dollar is a community-based local currency started in 2003 (Tracey, 2008) on the initiative of an anonymous citizen and continued in 2004 as a project of Democracy Unlimited of Humboldt County (DUHC), an umbrella organisation for several Humboldt, California area community projects. Humboldt Exchange Dollars are based in large part on the well-known currency Ithaca Hours, with the caveat that the purpose is not only to increase local economic prosperity but also to enhance local community democratic processes through the use of a more democratic form of money. Being sponsored by DUHC gave Humboldt Exchange Dollars the advantage of recognition and association with a supportive local community organisation, helping the currency to gain and increase circulation. The key regulatory body influencing Humboldt Exchange Dollars is the IRS, which Miller (2008) notes gives unofficial governance guidance despite lack of official regulations. To meet IRS requirements for exchangeability, Humboldt Exchange Dollars are directly pegged to the US Dollar. Thus, Humboldt Exchange organisers advise all users to treat Humboldt Exchange Dollar transactions just as they would treat US Dollar transactions for IRS reporting purposes. The remaining key national regulatory body, the US Treasury Department, requires that currencies issued in the USA be clearly distinguishable from US Dollars and worth a minimum of one US Dollar, which Humboldt Exchange organisers are careful to observe. As will be seen later in section 6.1.2 of the Analysis chapter, this external regulation of Humboldt Exchange Dollar institutional policy strongly affects both internal institutional policy and currency functionality.

Humboldt Exchange Dollar PID data was gathered in large part through interviews. The Humboldt Exchange Dollar currency project is sponsored by the local non-profit institution Humboldt

Community Exchange, which is connected to DUHC. Questions regarding control and participation for currency users were answered by Humboldt Exchange organisers, who are volunteers from within the local community who have served as members of Humboldt Exchange committees for a set period of time. Semi-structured interviews with Humboldt Exchange organisers (Tracey, 2008) clarified decision-making processes, describing *"... the "volunteers" meeting where we make decisions, which isn't exactly closed, but is not publicly advertised. ... The other meeting is our "open meeting" which is publicly advertised as a way to learn more and get involved..."*

The Humboldt Exchange Dollar is a currency issued in the form of notes of various denominations which are directly intended to act as money. The requirement in the case of Humboldt Exchange Dollars to be exchangeable with the US Dollar certainly affects the use of Humboldt Exchange Dollars as a UoA, perhaps limiting use of Humboldt Exchange Dollars due to exchange and book-keeping. As a MoE, however, that requirement can either increase or limit use of the Humboldt Exchange Dollar, while as a SoV, Humboldt Exchange Dollars will be subject to the same changes in value as the US Dollar, effectively nullifying Humboldt Exchange Dollars as a separate currency for the purposes of long term value storage. Despite these potential limitations, the Humboldt Exchange Dollar is an important representative of a class of community-based currencies which are deliberately issued as money in the form of hand-exchangeable notes. This distinguishes Humboldt Exchange Dollars and similar currencies such as Ithaca Hours from non note or scrip based currencies, such as LETS and Time Dollars. Neither MCS nor time based currencies issue physical scrip intended for hand-to-hand exchange, and therefore these other currency institutions do not need to track the circulation of their physical exchange media. This means that different decision-making procedures can be followed as institutions that do not issue scrip need not deal with as many problems associated with notes, counterfeiting etc. Also, credit and time based currencies need not necessarily be fully exchangeable with national currencies. Indeed, many currency institutions insist on not pegging their currencies to a national currency for fear of inflation or other external control issues affecting the currency. Humboldt Exchange Dollars on the other hand, like Toronto Dollars (TorontoDollar, 2010) in Canada, and the Totnes Pound (Totnes, 2010) in England, are vulnerable to changes in value of the national currencies to which they are pegged. Yet like these community-based currencies outside of the USA, Humboldt Exchange Dollars remain more functionally flexible than a strictly time based currency, due to the ability to more easily charge varying prices for goods and services using physical scrip. Physical scrip currencies are shown by Mascornick (2007) and others to be both more viable than LETS, which according to Solomon (1996) may not even be legal in the USA. Humboldt Exchange Dollars by contrast, share

many traits, such as scrip issuance and tracking, exchangeability with the national currency, and greater flexibility as compared to credit or time based currencies, as do the above mentioned currencies from Canada and England. They differ in how they are regulated by the various national and regional governments, as well as in individual community policy.

4.4.2.2 Time Dollar Data

Time Banking began in the early 1990s, starting with the Time Dollar Institute by Dr. Edgar Cahn (Timebanks, 2010). The impetus for the creation and success of Time Dollars was the scarcity of national money, particularly in times of budget cuts and economic crises. The purpose of Time Dollars was to provide an egalitarian form of money to augment scarce national money. Through innovative networking and programs such as the 1995 Chicago Cross-Age Peer Tutoring Program, which featured the use of Time Dollars, the acceptance of this currency grew and Time Banks received various types of funding for several years. As funding was withdrawn, Time Banks adapted procedures and institutional structures in order to remain viable, thus requiring internal Time Bank decision-makers to conform to external regulatory requirements while simultaneously working to maintain an egalitarian currency issuance policy. Time Dollar external and internal governance derives from Solomon (1996), Time Dollars Institute guidelines, and interview data. The same national RFs influencing other currencies also affect Time Dollars, but these influences are moderated by the different functional and institutional emphasis of Time Dollars, with some Time Banks even choosing only, as Rowden (2009) notes, to "*accept donations from any non-governmental source*".

The use of **time** rather than printed notes as a currency allows more individual choice for payment. Time Banks also broker services across the community rather than between individuals. These differences prompted Coulter (1996) to rule Time Dollars tax exempt. Internal rules governing Time Dollars are derived from the individual Time Banks that issue them. Each Time Bank is founded by a local community or member group, with a Time Broker who administers the Time Bank. Member input guides Time Bank policy. While the effect of national level tax-exempt status may be to limit the size and flexibility of Time Dollars, thus limiting their use as a MoE, a strict adherence to the equality of each Time Bank member´s hour means that Time Dollars will always be stable as both a UoA and SoV. This makes Time Dollars an important representative case of time based currencies which do not issue token or physical scrip and are automatically limited in their issuance simply by the limited number of hours in a day. This is quite different from other

types of currency institutions which need to monitor circulation in order to prevent inflation and over-accumulation or hoarding of the currencies. While Time Dollars are tax-exempt in the USA, Time Banks in other countries, such as the United Kingdom, are regulated differently from one jurisdiction to the next. A particularly important reason is that some Time Banks in the UK have (anecdotally) considered allowing highly skilled members to charge more than one hour to the bank per hour of their own time donated, due to scarcity of certain skills. While the freedom to do this certainly exists, it would also significantly change both the participatory governance dynamics as well as the external regulatory stances toward those specific Time Banks, and potentially toward all time currencies in general.

4.4.2.3 Deli Dollar Data

Regulatory data for a loyalty currency accepted within a local community presents the dilemma of institutional sponsorship versus stakeholder popularity. As a business-issued currency, Deli Dollars could be regulated by the Securities and Exchange Commission (SEC), while as a community currency they were already regulated by both the IRS and Treasury Department. Deli Dollars came about as a result of the inability of Frank's Deli, a small business in Great Barrington, MA, to obtain bank loans needed to relocate the premises (Hannum, 2006). After consultation with local civil society organisations, a time-limited issue of store scrip notes was implemented for the purpose of raising funds to allow the deli to relocate without the need for bank loans. Over the course of one year those notes were redeemed, not only by store customers wanting to purchase from the deli, but also by members of the local community who had accepted or exchanged deli notes amongst themselves in payment for non-deli goods and services. Those deli notes circulated within the local community far beyond the deli, before eventually being redeemed in the store in exchange for deli products.

Not only the desire to support the deli, but also trust in the fact that the notes could be redeemed for deli products, as well as pride in the ability to use a locally generated medium of exchange appear to have been major motivating factors in the uptake of Deli Dollars as a widely accepted currency during this limited time in the town of Great Barrington, MA. While courts are divided on what constitutes a security, Solomon (1996) points out that since buyers of Deli Dollar notes did not expect to make a profit from them, Deli Dollars did not qualify under all criteria for securities. This regulatory ambiguity almost certainly limited the circulation and use of Deli Dollars as a UoA and MoE amongst non-deli customers. The limited redemption period clearly limited Deli Dollars as a

SoV. Yet in spite of these restrictions, townspeople chose to accept Deli Dollars as a MoE amongst themselves during this time. That uptake as a circulating currency make Deli Dollars one of the very few loyalty or business-sponsored currencies to have gained acceptance as a local currency in recent years. This makes it an important representative of privately-issued money which although local, may not share the same participatory dynamics as other local currencies. Warner (2007) points out that previous merchant-issued currencies in the USA came and went in response to times of economic hardship. Other private currencies which may or may not be exchangeable between non-company customers, such as the various AirMiles or Nectar Points programs, clearly lack the community focused person-to-person interchange of Deli Dollars. Hence although other private currencies do exist, this currency was rather unique. As a private business-sponsored currency, internal decisions for the Deli Dollar were made by the Deli owner, Frank Tortorelli, who was unavailable for interview. A Deli Dollar user (2008) pointed out that this currency was sold over a "*one month*" period, and "*redeemed over the next year*" for the explicit purpose of moving the deli. This leaves questions of internal decision-making ambiguous, given community acceptance of the currency, despite its business sponsorship.

4.4.3 Governance Data Score Allocations, by Data Set

Scoring procedures for the various components of raw governance data resolved two distinct requirements. The first need was to design and calibrate the three main analytical sets into which raw data would be separated for later analysis. The second need was for a systematic method of allocating scores to individual indicators within each of the raw data sets. The modifications by Kvist (2007) to fuzzy set analysis, while not directly applicable for reasons explained later, inspired much of the methodology used in this study.

Set calibrations were designed to facilitate analysis of RF toleration, PID, and scale together as one interacting system of processes. Three sets give a more complete picture of overall SMG, showing the three crucial components of monetary governance. The RF toleration set adheres the most closely to Kvist´s Ideal Type methodology. This uses qualitative breakpoint criteria to determine which data points were IN the set, OUT of the set, or more appropriately located at one of the eleven indicators between the two extremes of the set. While the criteria for falling IN or OUT of the RF Tolerated set are very clear, contextual judgements needed to be used, as indicated by Kvist, spreading out from the 50% benchmark. Because the emission, look and feel of physical scrip can

decisively affect circulation[10], it´s regulation was chosen as the midway benchmark for RF Toleration. Below the midway point, indicators were valued by the level of currency confidence potentially generated by the specific indicator, ranging from very little if the currency is in fact treated as an investment security rather than as currency, to much more confidence if the currency must be pegged to a national currency (but nonetheless not truly autonomous). Above the RF Toleration midpoint, scores ranged from more to full confidence in the currency based on reporting, recognition, oversight and encouragement from external RFs, each of which imply increasing measures of legality and viability.

The PID set, by contrast, had to deviate from Kvist´s methodology due to the need for three separate sets which were each built on a cumulative spectrum, allowing summation into one complete set. The three sets within the PID set, Shared Seigniorage, Shared Issuance and Shared Choice of Backing, are each built from a spectrum of shared decision-making indicators. The lines dividing each indicator in the spectra are blurred by ambiguity inherent in shared power within institutions. These three spectra are used to calibrate the resulting PID set. Because each spectrum forms an equal part of the PID set, the percentages determined at specific qualitative breakpoints Kvist describes could not be employed by spectrum, but were shaped into percentages of PID, described in detail in section 5.2.1 "PID Data Scoring". This allows the use of a more Kvist-like fuzzy set effect, with IN, OUT, and percentages in between PID set extremes. Thus the creation of a three-part cumulative set intended for PID to be measured more accurately in cases where there may be multiple practices or greater procedural variability within currency decision-making. The third set, the SPC set, required a different approach altogether, whilst also maintaining the IN/OUT and percentages in between currency scales.

The determining factors for currency scale, IN or OUT of the SPC, set include both monetary functionality and geographical circulation. Therefore both dimensions needed to be represented in the scale matrix. Since monetary functions are processes themselves, several qualitative labels related to the uses of the different currencies needed to be assigned quantitative weights, described in section 5.3. Those functional process weights then needed to be applied to a quantitative scale in a way which would be compatible with values used to weigh geographical circulation. The resulting matrix then needed to produce a set compatible with the RF Toleration and PID sets, as in

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[10] Schussman cites Costanza (2003) in pointing out that the emission of physical scrip boosts acceptance and circulation. Ithaca Hours, among other local currencies, began without physical scrip and later chose to emit notes, as do Toronto Dollars and Totnes Pounds. Schussman, Alan T., (2007). *Making Real Money: Local Currency and Social Economies in the United States.* [online]. http://textbench.com/schuss-manuscript-20070426.pdf) [Accessed 22 March 2010].

section 5.3. Calibrating these three sets to form an overall SMG set is of course based on the allocation of individual scores within each subset, described next.

Individual score allocations within each set are described here, and in further detail in the data presentation sections for each currency, in Chapter 5. As previously mentioned, Kvist and Ragin´s work on Fuzzy Sets inspired much of the methodology used in this study. Contextual knowledge of qualitative data was used to create and score each indicator, as summarised earlier. Nevertheless, this study could not directly apply Fuzzy Set methods for process and time-frame related reasons explained in greater detail elsewhere in this dissertation. SMG is a conjuncture of three key sets of processes, each with multiple varying subsets of processes.

Indicators within the three main sets, RF Toleration, PID, and scale (SPC), were scored as follows. RF Toleration indicators were generally straightforward to score, based on national and state regulations. PID indicators were each allocated a score based on specific details mined from qualitative data. Shared Seigniorage scores derive from stated investment policies of the currency institution. Scores for Shared Issuance came from the stated decision-making consultation policies together with institutional policies on how those decision-makers who are consulted are located, whether through a Board of Governors, open community meetings, etc. Finally, the scores for Shared Choice of Backing were allocated based on the currency redemption policy stated by each currency institution. Indicator scores then formed sets with common calibration for comparison.

The set calibration techniques and means of scoring individual indicators used in this study share Kvist´s emphasis on scoring judgements based on contextual knowledge of the data, applied to different ends. The three sets calibrated using qualitative breakpoints allow a more complete picture of monetary governance process interactions than one set alone. Creating these sets requires that those interacting processes be taken into account when scoring indicators, but allows a multi-dimensional understanding of the combined paradigms of monetary governance and monetary functionality. Analysing those varied dimensions required consistently processed data scores across each of the sets, described next.

4.4.4 Analysing Processed Data

Analysis shaped the collection of data with an emphasis on examining interacting processes rather than finding causal relationships. Data sets were compared for relationships between RF tolerance, internal decision-making, and scale, which required consistency between RF, PID and scale scores.

Care was taken to avoid bias in score creation through uniform application of criteria, while maintaining consistency between scores, yet allowing for contextual differences in classification. Two additional comparisons are made for each currency between RF toleration PID and scale. The first comparison uses summation of data scores while the second comparison depicts them together visually. For clarity purposes, technical details have been included in the relevant chapters.

4.5 Reflections on methods not used

4.5.1 Unrelated methods

Other methods were considered initially but did not fit with the broadly comparative nature of this study, thus data analysis methods needed to be extended for this thesis. Non-national currency research does not lend itself to quantitative methods due to the small macro-economic impact of SPCs and the qualitative nature of RFs.

Analysis of data within and across data sets raised questions of RF bias against non-national currencies. Huang (2003) investigated the impact of China's RFs on foreign and domestic firms operating in China, exploring the type and weight of monetary regulation. While Huang's study compared qualitative interview data with statistical data to show operational effects of regulatory bias on various types of firms, that methodology could not be applied here due to lack of statistical data for non-national currencies.

Unstructured interviews may not provide the specific data needed to create currency governance and scale data, particularly for a wide range of currency institutions. Likewise, case studies, though favoured earlier in this project, would not allow wide ranging comparison between a broad spectrum of currencies. Other conventional research methods such as surveys or questionnaire enquiries were considered, but deemed inapplicable due to the very small number of currency institutions available to study, as well as the hesitation on the part of many groups contacted in the USA and in the UK to participate in such a study. Furthermore, the questions this study asks revolve around details of decision-making processes and circulation with which many currency users may be unfamiliar. Study of these processes required a somewhat more open question set, and the ability to obtain information from specific members of each currency institution, making general surveys unsuitable for this study. The use of questionnaires was also less suitable for the

variety of qualitative data necessary to begin understanding process interactions between economic and governance paradigms. Since much of the data necessary for this study varied in detail from case to case, a standard set of questions could not be created until much of the data had already been gathered. The variability of the processes under study allowed little room for quantitative data gathering. Perhaps in future studies combining these two paradigms, economic and governance processes can be further quantified in larger scale comparisons.

Seyfang's (1996) application of the social audit methodology evaluates the success of an organisation based on the organisation's own objectives. The difficulty with her methodology is that this investigation compares a varied set of currencies as a group with a more fixed set of criteria. This project also does not aim to evaluate the success of individual currencies but to understand their shared institutional governance in the face of multiple governance and functional influences. Using the social audit approach would require a different definition of success for each currency institution. Since the goals of an organisation derive from a foundation of governance, it is necessary to know who sets the goals and why, which is not what the social audit technique is intended to measure.

4.5.2 Fuzzy Sets

Data for this project, though mixed, is largely qualitative. Data comparison and analysis was done using a method inspired by Ragin's (2000) Fuzzy–Set Qualitative Comparative Analysis (QCA), which allows quantification of qualitative data over time using sets and truth-tables to determine cause and effect. Kvist (2007) adapted Ragin's work emphasising context and qualitative anchors for descriptive analysis. Kvist, whose ideal type technique uses similar contextual judgements and qualitative breakpoints, describes Ragin's process in four steps. First, empirical indicators are chosen for each set to be studied. Indicators are drawn from data, informed by theory. Second, nine qualitative break point indicators are calibrated for each set and placed in a table with the same relative numerical placements. These indicators spread upward and downward from the 50% cross-over point based on contextual knowledge of the data. The numerical table converts indicator labels into fuzzy scores ranging from fully OUT of each set to fully IN each set. Third, qualitative data is scored by each indicator for each time frame. The fourth step is to use set logic to compare truth tables showing qualitative 'differences in kind' in the set memberships over time. These differing set configurations show both qualitative (movement from IN a set to OUT or vice versa) and quantitative (degree of change in a set without crossing over the qualitative 50% threshold) changes

over time in the categories being studied. Together, these categories make up the ideal type, which can be approached or moved away from over time.

Determining cause and effect is not the objective of this thesis, which uses simpler techniques, ruling out Ragin's (1987) initial method immediately. While Kvist's (2007) descriptive application of fuzzy-sets appeared more applicable to this thesis, there were several differences which made it less feasible to apply fuzzy-sets.

First, this study does not use data over differing time periods, but in a single cross-section. Previous applications of fuzzy-sets used time as a key factor, which is not applicable here.

Second, this investigation is more of a case study than Ragin's preferred balance between case study and quantitative analysis. A larger scale study may potentially change this, but this work did not hazard a first application of fuzzy-sets to currency governance and scale because it did not fit the types of large data sets previously used with fuzzy-sets.

Third, the analysis technique used here is simpler and hopefully more accessible to all currency stakeholders.

Fourth, the data available for this study was not amenable to the same set layout due to the types of theoretical issues under discussion. For example, the Tolerance by RFs set indicators was drawn from literature discussing the importance of each of those indicators. While the PID set might have been broken up into three individual sets, this would have produced more sets than Kvist illustrates, while fewer indicators for the PID set would not adequately have evaluated the categories.

Fifth, the need to combine function and geography into one scale metric for the SPC set differs from the direct indicator construction of each fuzzy set. The need to include both parts of scale thus precluded using direct indicators.

Finally, rather than describing movement toward or away from an ideal type over time, this study aims to understand how underlying processes influence the outcome of SMG. The SMG score is intended to show how RFs, internal processes and scale influence each part of institutional governance in a simpler way than fuzzy-set appears to do. A summation table rather than truth tables shows to what extent a currency institution allows SMG and in which dimensions. This work

studied interactions between governance and function factors in order to illuminate stakeholder ability to engage fully with currency decision-making processes.

No existing methodology seemed appropriate for this study, given the interconnected process-based typology needed. Charmaz´s (2006) emphasis on understanding processes in their social context highlights the complexity of combining currency governance and function within the context of money as socially constructed under competing influences. Heinrich (2004), while in accord with both Charmaz and Dow (2003) in noting the importance of flexible conceptualisation in measuring influences contextually yet within a comparative framework, encounters similar obstacles to this thesis, including lack of empirical data.

4.6 Conclusion

This methodology evaluates the SMG level of a currency as determined through its treatment by external governance factors, internal decision-making processes and scale, although the scope of this work limits examination of external factors to national RFs. Transparency, accountability and stakeholder participation in decision-making form the background of internal monetary governance, which applies these governance principles to three currency-specific processes. Seigniorage revenue distribution and currency issuance decision-making are the first two. The third process, currency backing decision-making, links closely with scale, which is operationalised through the functions of money and geographical circulatory range. As previously discussed, general purpose money performs the UoA, MoE and SoV functions, while SPCs do not fulfil all of those functions. Though SPCs can allow greater shared decision-making due to their smaller institutional scales, this may not hold true in all cases. There were varying degrees of SMG found among both general and special purpose currencies. This classification allows for these differences when evaluating SMG. These elements are all examined empirically in the following chapters.

Chapter 5 - Data

The measurement of SMG begins by presenting a comparison of national Regulatory Framework (RF) tolerance toward various currencies in the USA. Raw data is first presented for external governance, operationalised here as US national RFs, then for internal governance, and lastly for scale. The conclusions for each currency are summarised together at the end of this chapter.

5.1 Tolerance by US National Regulatory Frameworks

Solomon (1996) summarises legal concerns around taxability, financial securities and counterfeiting of national currency, finding that US law exempts non-profit institutions, time limited note issues, and limited circulation notes from most reporting requirements. Hence each of these concerns is used in evaluating US national RF tolerance toward any given currency institution. While all paper currencies are required to differ visually from the US Dollar, and may not be allowed at all in the states of Virginia and Arkansas, Solomon´s circulation range and securities criteria must be applied separately for each currency, albeit with some potential amount of uncertainty.

5.1.1 US National RF Tolerance for the US Dollar

RFs surrounding the US Dollar are voluminous and complex, demonstrating the tensions Chinn (2005) notes in the world's largest economy's domestic currency and de facto world-wide reserve currency. Responses to questions about the US Dollar tend to be unambiguous. Raw data on US Dollar tolerance by US RFs is examined followed by the processed data and finally the analysis of how that regulatory treatment may affect SMG potential for the US Dollar. Table 5.1 below shows that the US Dollar is fully supported by all RFs in the USA, with legal tender status, Federal Reserve oversight and tax reporting and payment requirements. US coinage is treated as part of the US Dollar since it falls under the same regulations as the US Dollar equivalent Federal Reserve notes. Given that legal tender status is in itself an incentive to use national currency, the US Dollar is Fully Tolerated.

Table 5.1: Processed US Dollar Regulatory Framework Toleration Data

National RFs			US Dollar
Tolerated	Currency is legal tender	"1.0 fully IN"	y
IN	Is the currency accepted for tax payment?	95%	y
	Encouraged to be accepted or available credits/tax breaks, incentives awarded	90%	
	Is the currency Overseen by a central bank	80%	y
	Currency governance structural forms, procedures or office hours mandated?	70%	
	Are earnings in the currency reportable to benefit, tax or other agencies (by requirement)?	60%	y
	Is the look and feel of notes regulated or prohibited?	50%	y
	Is circulation of the currency restricted?	45%	
	Must backing, exchangeability, convertibility or value be pegged to national money?	40%	
	Are benefits recipients (dole/welfare, disability, etc.) penalised for using this currency?	30%	
	Are the processes which apply to this currency inconsistent in law or application?	20%	
	Is this currency overseen as a financial security?	10%	
OUT	This currency is outlawed	"0.0"	
Data Sources:	Solomon (1996) http://www.ustreas.gov/education/faq/currency http://www.treas.gov/press/releases/ls377.htm http://www.irs.gov/pub/irs-tege/gulc_governance_speech_042308.pdf http://www.house.gov/paul/congrec/congrec2006/cr021506.htm http://www.federalreserve.gov/generalinfo/faq/faqfomc.htm http://www.federalreserve.gov/aboutthefed/bios/board/default.htm http://www.ustreas.gov/education/faq/currency/legal-tender.shtml#q2	Total:	100%

Processing national Regulatory Framework data for the US Dollar was the most straightforward of any of the currencies studied. As a currency with legal tender status, the US Dollar automatically falls Fully IN to the set of Tolerated currencies by US monetary RFs. Questions encountered while tallying and processing data for the US Dollar involved deciding what to do with remaining data points after the automatic IN questions scored Yes responses. For completeness those responses were kept along with the top two 'automatic IN' triggering responses in order to compare with other currencies if necessary. As expected of a national currency, the tolerance criteria showed Yes responses for the full spectrum of More Tolerated percentages, yielding no surprises in the data processing of the US Dollar.

The preference enjoyed by the US Dollar from the surrounding US regulatory environment may actually limit the Dollar's potential for shared decision-making. While seigniorage revenues are shared with the US Treasury Department by the Federal Reserve, thus becoming part of the US national budget, most stakeholders have no direct input into seigniorage decisions. Likewise the position of the Federal Reserve's FOMC as independent issuer of the US Dollar closes input to most stakeholders. Such rigidly closed governance appears unlikely to allow for more general participation in monetary governance. Thus while the US Dollar enjoys the full support of national

RFs, that support may not create an environment in which shared US Dollar decision-making can grow. In conclusion, RFs in the USA are intended to facilitate the functioning of the US Dollar, and so while it is unambiguously Fully Tolerated this may not hold true for other currencies issued by private or community-based organisations.

5.1.2 US National RF Tolerance for Community-Based Currencies: Humboldt Exchange and Time Dollars

Warner (2007) and Gatch (2006) assert that there has always been a wide variety of currencies in the United States. Currencies designed to be used in hand to hand exchanges and time based currencies designed to allow users to store value are most prevalent now. UoA emphasising currencies such as Local Exchange Trade Systems (LETS) are excluded for reasons of scope and unclear regulatory status. The currencies chosen to represent the key functions of MoE and SoV are Humboldt Exchange Dollars and the Time Dollar respectively. Tolerance by US federal and state level regulatory agencies toward both of these currency institutions are compared later to understand effects on their potential degrees of SMG.

5.1.2.1 US National RF Tolerance for Humboldt Exchange Dollars

Humboldt Exchange Dollars are community-based, modelled on Glover's (1997) Ithaca Hours, sponsored by the non-profit Humboldt Community Exchange, of Humboldt County, California. Notes printed and decorated by local artists start at $5 Humboldt, exchangeable for $5 USD and are issued in three ways, all based on backing of the US Dollar. Individuals may buy advertising space, paid in US Dollars, in the Exchange newsletter, earn Humboldt Exchange Dollars from others, or exchange US Dollars directly for Humboldt Exchange Dollars. Although decisions are made by Humboldt Exchange members as a community, national RFs may approach this currency from its non-profit community-based status, or merely as an issuer of currency.

Table 5.2: Processed Humboldt Exchange Dollar Regulatory Framework Data

National RFs			H.E. Dollar
Tolerated	Currency is legal tender	"1.0 fully IN"	
IN	Is the currency accepted for tax payment?	95%	
	Encouraged to be accepted or available credits/tax breaks, incentives awarded	90%	some
	Is the currency Overseen by a central bank	80%	
	Currency governance structural forms, procedures or office hours mandated?	70%	some
	Are earnings in the currency reportable to benefit, tax or other agencies (by requirement)?	60%	y
	Is the look and feel of notes regulated or prohibited?	50%	y
	Is circulation of the currency restricted?	45%	some
	Must backing, exchangeability, convertibility or value be pegged to national money?	40%	y
	Are benefits recipients (dole/welfare, disability, etc.) penalised for using this currency?	30%	some
	Are the processes which apply to this currency inconsistent in law or application?	20%	
	Is this currency overseen as a financial security?	10%	
OUT	This currency is outlawed	"0.0"	
Data Sources:	Solomon (1996) http://www.humboldtexchange.org/faqs.htm	Total:	65%

Federal oversight of currency institutions like the Humboldt Exchange is somewhat inconsistent, due to questions about circulation and exchangeability of Humboldt Exchange Dollars, which are neither legal tender nor accepted for tax payment in any US jurisdiction. Although there is no Federal Reserve oversight, earnings in Humboldt Exchange Dollars remain reportable for federal and local taxes. Nonetheless, the fact that they are exempted from Federal securities reporting and oversight requirements as well as from most state oversight implies an increased level of toleration as Table 5.2 above shows, the 90% criterion scoring "some" in acknowledgement of this regulatory toleration. Based on Solomon's (1996) findings, Humboldt Exchange Dollars are exempt from Federal securities reporting requirements since they are non-profit sponsored and most transactions are intra-state. Earnings of all reportable transactions must be paid in US Dollars, which is touched upon further in the internal governance data.

Data ambiguities arise in three areas regarding national regulation. First, Federal exemptions from reporting requirements may not provide positive incentives to use the currency. Second, uncertain requirements for proving non-profit status and the attendant procedures, office and paperwork requirements can create disincentives to use the currency. For this reason, a score of "some" is also

given in the 70% IN criterion. Third, taxing earnings from Humboldt Exchange Dollar transactions may penalise the poor, since taxes are payable in US Dollars, resulting in a score of "some" for the 30% tolerated criterion. Thus the limited circulation and community orientation of Humboldt Exchange Dollars seems to be a legal grey area allowing them to be legally tolerated, but not fully encouraged by US RFs.

Of the four clearly applicable criteria, all but one fell below the 50% threshold, while the fourth Yes is at 60%, implying Less Toleration. On the other hand, there are important exceptions for Humboldt Exchange Dollars allowing regulatory authorities to treat this currency with greater leniency. Two of those allowable exceptions fall reasonably well above the Tolerated threshold, at 90% and 70%. Taking the community and non-profit nature of this currency institution with the regulatory ambivalence toward Humboldt Exchange Dollars, it seems reasonable to assign a value of slightly More Tolerated to Humboldt Exchange Dollars, at 65% Tolerated.

Analysis of the previously discussed data gives the first indications of how toleration by national RFs may affect the Shared governance potential of Humboldt Exchange Dollars and other community sponsored currencies. Humboldt Exchange Dollars appears to strike a favourable balance between external regulation and institutional independence. The Humboldt Exchange's non-profit status allows the benefit of community oriented legal exemption from reporting. But it also encumbers the institution with paperwork and structural requirements that are more demanding than other possible institutional structures. Indeed, the requirements of non-profit status impact seigniorage revenue decision-making, while limiting circulation likewise removes reporting requirements for financial securities, but adds the difficulty of reporting local currency earnings taxable in national currency, impacting issuance decision-making. Furthermore the US Dollar exchangeability requirement which the Humboldt Exchange governing committee works to meet heavily impacts Humboldt Exchange Dollar backing.

A delicate balance of retaining the tolerance of US Federal and California regulatory bodies while upholding Humboldt community values is achieved by using the Humboldt Exchange institutional framework to address regulatory requirements, yet the reasonably tolerant national RF stance toward a carefully designed community-based currency such as Humboldt Exchange Dollars can be both an asset and a liability for important aspects of SMG. Nevertheless, this RF toleration may allow a greater degree of SMG for Humboldt Exchange Dollars than for the US Dollar. The next currency to be surveyed will be a primarily SoV community-based currency.

5.1.2.2 US National RF Tolerance for Time Dollars

Time Dollars, initiated through Cahn's (2006) Time Dollar Institute, are a time based currency administered through any community Time Bank. Currency users volunteer their time as deposits into the´ bank´ and may withdraw hours of time from other members who donate services. Initially each person deposited one or more hours as a unit of currency and could withdraw similarly. As Time Banks evolved, concerns over differences in desirable skills and hour for hour qualitative differences began to result in changes at some Time Banks to accommodate greater skill levels. The overall ethos of community spirit and egalitarian exchange of time appears to remain the overriding principle of Time Dollars and the basis of the currency.

The non-profit status of the Time Dollar Institute and Time Banks in general create incentives to use this currency via relaxed Federal reporting requirements. On the other hand, non-profit status also brings structural and procedural requirements, despite the lack of circulating transaction media. By encouraging community volunteering, and allowing storage of donated time rather than circulating currency, Time Dollars are exempted from most reporting and oversight requirements as Coulter (1996) confirms, ruling Time Dollar earnings in the USA non-reportable for tax purposes. Thus the community orientation and lack of circulation make Time Dollars the most lightly regulated non-national currency in the USA.

Table 5.3: Processed Time Dollar Regulatory Framework Data

National RFs			Time Banks USA
Tolerated	Currency is legal tender	"1.0 fully IN"	
IN	Is the currency accepted for tax payment?	95%	
	Encouraged to be accepted or available credits/tax breaks, incentives awarded	90%	
	Is the currency Overseen by a central bank	80%	
	Currency governance structural forms, procedures or office hours mandated?	70%	some
	Are earnings in the currency reportable to benefit, tax or other agencies (by requirement)?	60%	
	Is the look and feel of notes regulated or prohibited?	50%	n/a
	Is circulation of the currency restricted?	45%	n/a
	Must backing, exchangeability, convertibility or value be pegged to national money?	40%	n/a
	Are benefits recipients (dole/welfare, disability, etc.) penalised for using this currency?	30%	
	Are the processes which apply to this currency inconsistent in law or application?	20%	
	Is this currency overseen as a financial security?	10%	
OUT	This currency is outlawed	"0.0"	
Data Sources:	Solomon (1996) http://www.timebanks.org/documents/IRSRuling-TimeDollars.doc	Total:	80%

Table 5.3 shows national RF data for Time Dollars. Processing RF tolerance data for Time Dollars revealed the most surprising of the currency results processed in this study. While none of the responses produced clear Yes criteria for any of the regulatory categories, several were in fact not applicable. All of these categories, which fall in the midrange of the Tolerated percentage spectrum, presented difficulties with the data. None were clearly answerable as Yes or as No, but fell somewhere into a category that simply did not exist. The only case which presented compelling evidence in favour of an unofficial Yes response was that of incentive based encouragement. Communities and local authorities informally give a good deal of encouragement to Time Banks in the US. On this basis the assessment of More Tolerated is assigned to Time Dollars, at of 80% Tolerated.

Benign neglect by most US RFs may allow Time Dollars a greater potential for SMG. The lack of a circulating transaction medium allows the currency to be distributed in ways that may not be allowed to other currencies. For example, there are technically no seigniorage revenues with Time Dollars, but hours donated or charged as fees for Time Bank membership can still be viewed as a form of seigniorage revenue, and be redistributed in any way agreed upon by Time Bank members. Hence, seigniorage decisions are potentially more fully shared with a time-based currency, as are issuance decisions for Time Dollars, unrestricted by circulation concerns. Choice of backing is fully open in the case of Time Dollars since the time based valuation and lack of market style transactions eliminates the need to peg Time Dollars to the US Dollar. However, the two main

factors granting relative regulatory advantage to Time Dollars also potentially limit its degree of SMG. Despite the advantage that Time Dollars derives from simplicity, its simplicity and non-profit status can place limits on the flexibility and thus the viability of the currency. The ultimate effect of regulation on Time Dollars depends on how the internal governance is affected by those external (national) RFs, and whether the scale of the currency affects those internal decision-making processes. The design simplicity and basis in community volunteering may leave little to regulate, yet the very qualities which favour Time Dollars could also conspire to limit currency stakeholder input concerning the functional uses and circulatory range of the currency.

This section has explored two major community-based currencies, Humboldt Exchange Dollars which emphasise the MoE function of money, and Time Dollars, which emphasise the SoV function. Community-based currencies take various forms. MoE based currencies like Humboldt Exchange Dollars can be more flexible from a transaction point of view than SoV emphasising currencies like Time Dollars, however that very flexibility may to lead to greater regulatory pressure on such currencies. While community-based currency institutions differ in decision-making processes from privately issued currencies, Deli Dollar data can shed light on whether these distinctions are recognised by RFs in the USA.

5.1.3 US National RF Tolerance for Privately Issued Loyalty Currency: Deli Dollars

There is a popular perception that RFs in the USA are biased toward the business community. If this is true then it would be expected that RFs would favour business sponsored loyalty currencies. Deli Dollars was a community supported loyalty currency which began as a series of forward-purchase deli product notes issued by a local business owner when financing was unavailable to move premises. The deli was popular with community members, who supported the effort and began to purchase and exchange the notes in transactions among themselves. Thus, this loyalty currency also became a circulating community supported currency.

Deli Dollars, whether treated as a loyalty currency or as a financial security, were less ambiguous than other non-national currencies. They were not legal tender, nor were they usable for payment of

taxes, yet Solomon (1996) points out that they were not completely exempt from Federal securities reporting requirements, hence they were neither encouraged nor incentivised. While not overseen by the Federal Reserve, Deli Dollars were reportable, in their US Dollar equivalent, for tax liability. The circulation and appearance of Deli Dollar notes remained restricted and benefits recipients would have had to pay taxes on any Deli Dollar earnings in US Dollars. Although Deli Dollars were partially exempt from securities reporting requirements due to the time limited issue, any loyalty notes issued without expiration dates would not be exempt. There is also some inconsistency regarding the exemption period, due to differing state regulations. While most states exempt time expired notes of less than nine months, two states Ohio and Oregon, do not. Hence Deli Dollars, as a business sponsored currency, were marginally tolerated by US regulations, but other loyalty currencies might not fair as well, should they be taken up by local communities as the Deli Dollar was.

Table 5.4: Processed Deli Dollar Regulatory Framework Data

National RFs			Deli Dollars
Tolerated	Currency is legal tender	"1.0 fully IN"	
IN	Is the currency accepted for tax payment?	95%	
	Encouraged to be accepted or available credits/tax breaks, incentives awarded	90%	
	Is the currency Overseen by a central bank	80%	
	Currency governance structural forms, procedures or office hours mandated?	70%	
	Are earnings in the currency reportable to benefit, tax or other agencies (by requirement)?	60%	y
	Are the look and feel of notes regulated or prohibited?	50%	y
	Is circulation of the currency restricted?	45%	y
	Must backing, exchangeability, convertibility or value be pegged to national money?	40%	y
	Are benefits recipients (dole/welfare, disability, etc.) penalised for using this currency?	30%	y
	Are the processes which apply to this currency inconsistent in law or application?	20%	initially
	Is this currency overseen as a financial security?	10%	y
OUT	This currency is outlawed	"0.0"	
Data Sources:	Solomon (1996) http://www.smallisbeautiful.org/local_currencies.html	Total:	50%

Deli Dollar treatment by national RFs, shown in Table 5.4, came out fairly clearly in terms of classifying Yes responses. While there were two potential areas of uncertainty, the majority of categories were clear for this currency. Some regulatory inconsistencies exist from state to state

due to the status of the Deli Dollar as a time limited note issuance. Deli Dollars earnings being tax reportable indicates a measure of toleration by national authorities, rather than simply banning it, as other privately issued currencies have been recently, Liberty Dollars being a prominent example. However, beyond this bare crossing of the More Tolerated threshold at 60%, all of the remaining Yes responses, including all of the remaining Less Tolerated categories with one exception, are placed at the Less Tolerated end of the spectrum. The one exception is due to the status as time limited notes, which provided some relief from Federal and most state securities oversight requirements. Solomon notes a degree of ambiguity surrounding Deli Dollars status as a security. That ambiguity combined with convertibility questions for the Deli Dollar loyalty currency appears to have made it tolerated by US RFs, but not encouraged, meriting an assessment of 50% Toleration.

In contrast to previously surveyed currencies, more regulatory tolerance for the Deli Dollar might have enhanced its shared governance potential. Most of the regulatory criteria to which Deli Dollars conformed are applicable because it is a loyalty currency, despite having had a staunch community following. Deli Dollars are noted by Witt (1998) as one of the first post 1930's community supported currencies. Nevertheless, the for-profit basis of issuance for this currency made it distinct legally and treated differently from not-for-profit community supported currencies. Despite its community orientation, RFs in the USA appeared to show a lower tolerance for the Deli Dollar than for community-based currencies, implying that institutional sponsorship really does matter. A summary of RF treatment by currency follows.

5.1.4 US National Regulatory Frameworks Data Summary

This section has explored some aspects of US national monetary regulation in the context of multiple currencies. It has looked at the national currency, two major types of community-based currency, and a loyalty currency as they fall under US regulatory scrutiny and reporting requirements.

The US Dollar and the regulations surrounding it are well known if complex, and processing the data was straightforward, as was the resulting Full regulatory toleration for the US Dollar.

However that toleration also implies a rigidity which may not allow much sharing of monetary governance.

Interpreting data for Humboldt Exchange Dollars presented challenges for processing yet showed a regulatory flexibility which may allow potentially higher degrees of SMG.

The limited nature of Time Dollars by contrast may limit its overall level of SMG despite passing unnoticed by most US RFs. Nevertheless, Time Dollars turn out to be quite highly tolerated by national RFs.

Deli Dollars were found to be only marginally tolerated by RFs, potentially pushing them toward greater SMG in the long run. Detailed comparisons of regulatory treatment toward each currency are undertaken next, followed by examinations of regulatory toleration toward various currencies in the light of other influences.

Figure 5.1: Comparison of Tolerance Percentage by US National Regulatory Frameworks for All Currencies
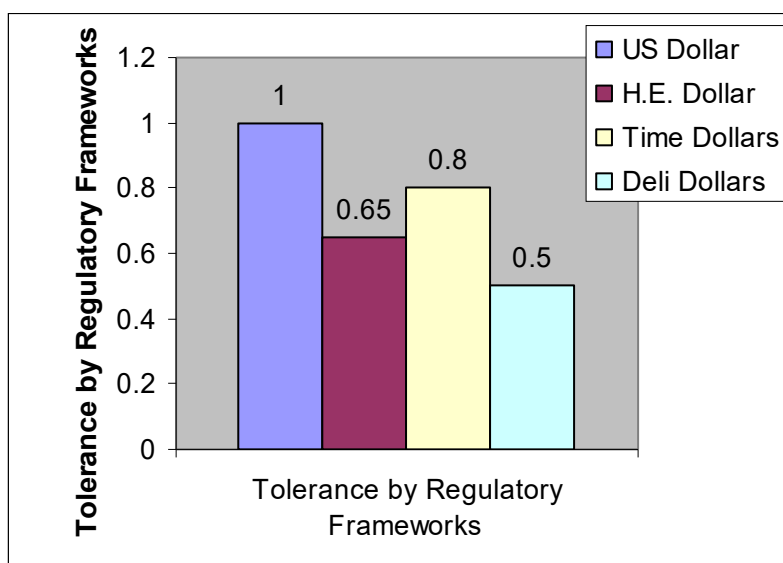
It is now possible to make comparisons regarding regulatory tolerance shown toward different currencies. Clearly, RFs will be more tolerant toward some currencies than toward others based on national RF priorities. Despite commonly-known anecdotes alleging that US RFs prioritise businesses and discourage community-based currency institutions, the data points to favourable treatment for community-based currencies, and ambivalence toward business-sponsored loyalty currencies. Indeed, Figure 5.1 shows the US Dollar as the sole Fully Tolerated currency, yet both community-based currencies are more tolerated, while business issued Deli Dollars were the **least tolerated** of all the currencies studied. While the limited circulation of a local loyalty currency may ease reporting requirements, business sponsorship seems to make loyalty currencies less favoured than community-based currencies, due to their explicitly non-profit sponsorship.

In conclusion, US national regulatory oversight and reporting requirements were compared for each currency, with loyalty currencies faring less well than community-based currencies. The next section adds further context to the regulatory perspective by exploring how internal currency institutional decision-making affects potential levels of SMG as internal institutional policies interact with the external impositions of national RFs.

5.2 Internal Monetary Governance Data

In the previous section, effects of national RFs on currency institutional governance were explored based on prior conceptualisations of governance which emphasise the need for fair and predictable legal frameworks. Transparent, accountable and participatory decision-making processes at various scales within a currency institutional framework are examined through seigniorage distribution, issuance and backing across currencies. While national currencies may have limited stakeholder input, since they must maintain value against other world currencies, community-sponsored currencies may have a greater freedom of scope for shared decision-making, given their community-based priorities. Loyalty currencies however, appear more likely to limit shared decision-making given the business requirement for profitability. These concerns are explored using data collected for each currency. The scoring details for PID are explained below.

Table 5.5: Processed *Company Store* Internal Governance Data (Hypothetical)

Internal Governance	Score	Company Store
Shared Seigniorage		
Seigniorage revenues reinvested as shareholder dividends or profit	1	1
Seigniorage revenues split with National Treasury	2	
Seigniorage revenues shared between currency holders	3	
Seigniorage revenues donated to non-local charity	4	
Seigniorage revenues invested in local community	5	
Shared Seigniorage tally:	S. total	1
Shared Issuance Decision-making		
Issued by Private Firm or Individual without public consultation	1	1
Issued by National, supranational or international Governmental Authority	2	
Issued by publicly chosen or elected Local Authority	3	
Issued via elected management committee of Community, Civil Society Group or local business	4	
Issued via open walk-in vote of community or Civil Society Group	5	
Shared Issuance tally:	I. total	1
Shared Choice of Backing		
Fiat currency with no user decision-making participation or representation	1	
Fiat currency with limited user decision-making participation	2	
Backed by commodit(ies)y, no user decision-making participation or representation	3	3
Backed by cash or commodities, limited user decision-making participation	4	
Backed by both commodity and cash redemption choice with full user decision-making participation	5	
Shared Choice of Backing tally:	B. total	3
Coercively Issued: Automatic OUT and score of "-1"	Fully OUT	-1
The currency's long-term strategy is user consensus based with open membership direct participation	Fully IN	
Total PID score	45	5
Percentage 'IN' the set of PID Currencies:	100%	IN

5.2.1 PID Data Scoring

Participatory Internal Decision-making data has three sections: seigniorage, issuance, and choice of backing, which were each scored from l to 5 based on shared stakeholder decision-making. Adding the possible scores together within each section gives a possible score of 5 if only one choice is picked within the section, as will be the case for most currencies. However, some currency institutions do use multiple approaches, for example to sharing seigniorage, and so it is possible to have a maximum score of 15 for each section, yielding a total of 45 rather than the total governance score of 15 as first anticipated. To account for the possibility of multiple practices, multiple checks are allowed within each section, with the caveat that the average expected score will be closer to 15 and that scores above 15 are more likely to be outliers. Hence scores between 12 and 45 will be 1.0, or fully IN the set of Participatory Internal Decision-making Currencies, those with scores from 1 to 6 are 0.0 or fully OUT of the set, while scores ranging from 7 to 11 are in-between. Scores from 7 to 11 will be 10% for a score of 7, 30% for 8, 50% for 9, 70% for 10, and a score of 11

indicates 90% of the way IN to the PID set[11]. This comparison uses 15 criteria previously described in section 4.2.2 of the methodology chapter to process the raw data and analyse its implications. IRS exchangeability requirements and exemptions from intra-state reporting regulations are left out of the analysis since they apply to every currency. While the sample *Company Store* Scrip shown in Table 5.5 above would normally score 5, making it completely out of the PID set, the fact that it is also very small in scale would ordinarily make the currency more susceptible to influence from its users. However, because Railway workers, the main users of *Company Store* currencies were coerced into accepting it, an overall PID score of -1 is issued for this particular currency, as discussed in section 4.2.2.

5.2.2 Internal Governance of the US Dollar

The US Dollar has a complex internal decision-making structure, with both the Treasury Department and the Federal Reserve ("The Fed") holding key stakes in operations related to the running of the national currency. Cukierman (1992) points to functional implications of central bank independence, but such independence can lock currency stakeholders out of decision-making process, as illustrated by the FOMC´s closed door meeting policy mentioned earlier. US Dollar issuance involves multiple agencies, being overseen and issued by the Fed, which is technically a semi-private organisation, although run by Presidential appointees who are confirmed by Congress. While publication of FOMC meeting minutes conforms to Fed transparency requirements, the Fed is neither publicly accountable nor accessible to most users of the US Dollar, a fact which is reflected in US Dollar PID data below.

Table 5.6: Processed US Dollar Internal Governance Data

Internal Governance	Score	US Dollar
Shared Seigniorage		
Seigniorage revenues reinvested as shareholder dividends or profit	1	
Seigniorage revenues split with National Treasury	2	2
Seigniorage revenues shared between currency holders	3	
Seigniorage revenues donated to non-local charity	4	
Seigniorage revenues invested in local community	5	
Shared Seigniorage tally:	S. total	2
Shared Issuance Decision-making		
Issued by Private Firm or Individual without public consultation	1	
Issued by National, supranational or international Governmental Authority	2	2
Issued by publicly chosen or elected Local Authority	3	
Issued via elected management committee of Community, Civil Society Group or local business	4	
Issued via open walk-in vote of community or Civil Society Group	5	
Shared Issuance tally:	I. total	2

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[11]A summary depiction of these percentages is repeated in Appendix 2, bottom of the Table.

Shared Choice of Backing		
Fiat currency with no user decision-making participation or representation	1	1
Fiat currency with limited user decision-making participation	2	
Backed by commodit(ies)y, no user decision-making participation or representation	3	
Backed by cash or commodities, limited user decision-making participation	4	
Backed by both commodity and cash redemption choice with full user decision-making participation	5	
Shared Choice of Backing tally:	B. total	1
The currency's long-term strategy is user consensus based with open membership direct participation	Fully IN	
Total PID score	45	5
Percentage 'IN' the set of PID Currencies:	100%	0%
Data Sources: http://www.treas.gov/press/releases/ls377.htm http://www.irs.gov/pub/irs-tege/gulc_governance_speech_042308.pdf http://www.house.gov/paul/congrec/congrec2006/cr021506.htm http://www.federalreserve.gov/generalinfo/faq/faqfomc.htm http://www.federalreserve.gov/aboutthefed/bios/board/default.htm	Total:	0% PID

Table 5.6 shows seigniorage revenues split between the Fed and Treasury, giving the US Dollar a score of 2 for seigniorage decision-making, while closed FOMC issuance decisions also yield a score of 2 for shared issuance decision-making. President Nixon's 1971 decision to make the US Dollar a fiat currency lacked consultation with users of the US Dollar, thus scoring 1 for shared choice of backing. Lack of stakeholder participation in US Dollar internal decisions therefore puts it entirely OUT of the PID set with a very low PID score of 5. The only difficulty encountered while processing data was some uncertainty over how much weight to assign the fact that the Dollar's backing was decided by a nationally elected representative. Scoring Shared Choice of Backing as 2 rather than 1 would make no difference to the outcome, since a score of 6 is also fully OUT of the set of PID Currencies. Nevertheless, in processing the data all decisions were made to conform to the reality of representation as much as possible, and for the US Dollar, user decision-making is far from effective in spite of nominal representative input. Thus, internal governance of the US Dollar by The Fed and US Treasury Department appear to leave little potential for SMG.

US Dollar PID data analysis has several implications. First, the processing and analysis of internal governance data bears out initial indications pointing to a low shared governance potential for the US Dollar. Secondly, the doctrine of independent central banking tends to isolate a national currency from participation in internal decision-making by domestic and also international users. While currency users can make their wishes known through external economic pressure in various ways such as consumer activism, participation in decision-making processes offer the fullest means of sharing institutional power. A third important factor in setting internal policy is that the Fed is not a fully public institution, limiting the level of public participation in issuance decisions. Finally the world-wide circulation of the US Dollar adds even greater complexity to internal decision-making processes. These internal governance factors limit PID for the US Dollar. Nevertheless,

non-national currencies may also be restricted in their potential for governance participation by the ways in which their own internal governance is structured.

5.2.3 Internal Governance of Community-Based Currencies: Humboldt Exchange Dollars and Time Banks

To introduce the data for internal governance of community-based currency institutions, it is useful to recall the nature of a community-based sponsoring institution. Both institutions reviewed here are local non-profit grassroots sponsored community organisations. Thus, their priorities are at least nominally set by the community. Community members should be able to share power within these structures, but practical issues such as external legalities or functional limitations also influence these processes. Humboldt Exchange Dollars are primarily a MoE while Time Dollars are primarily a SoV. These different functional emphases influence internal currency institutional processes and are explored through the data for each currency.

5.2.3.1 Internal Governance of Humboldt Exchange Dollars

The Humboldt Exchange shares seigniorage revenues with local charities and community enterprises, which invest in the local community, and make decisions through topical committee meetings which are fully open to the local community (Tracey, 2008). Although currency backing by US Dollars may enlarge purchasing options in the community, US Dollar backing also links Humboldt Exchange Dollars partially to US Dollar governance.

Table 5.7: Processed Humboldt Exchange Dollar Internal Governance Data

Internal Governance	Score	H.E. Dollars
Shared Seigniorage		
Seigniorage revenues reinvested as shareholder dividends or profit	1	
Seigniorage revenues split with National Treasury	2	
Seigniorage revenues shared between currency holders	3	
Seigniorage revenues donated to non-local charity	4	
Seigniorage revenues invested in local community	5	5
Shared Seigniorage tally:	S. total	5
Shared Issuance Decision-making		
Issued by Private Firm or Individual without public consultation	1	
Issued by National, supranational or international Governmental Authority	2	
Issued by publicly chosen or elected Local Authority	3	

Issued via elected management committee of Community, Civil Society Group or local business	4	
Issued via open walk-in vote of community or Civil Society Group	5	5
Shared Issuance tally:	I. total	5
Shared Choice of Backing		
Fiat currency with no user decision-making participation or representation	1	
Fiat currency with limited user decision-making participation	2	
Backed by commodit(ies)y, no user decision-making participation or representation	3	
Backed by cash or commodities, limited user decision-making participation	4	4
Backed by both commodity and cash redemption choice with full user decision-making participation	5	
Shared Choice of Backing tally:	B. total	4
The currency's long-term strategy is user consensus based with open membership direct participation	Fully IN	
Total PID score	45	14
Percentage 'IN' the set of PID Currencies:	100%	100%
Data Sources: Interview data http://www.humboldtexchange.org/faqs.htm	Total:	100% PID

Table 5.7 shows Humboldt Exchange Dollars scoring 5 for shared seigniorage, and 5 for shared issuance decision-making. National currency backing curtails choice for Humboldt Exchange Dollar users, resulting in Shared Choice of Backing scoring of 4. This difficulty arises with all community-based currencies whose backing is based in some part on a national or private currency. Nevertheless, this currency's highly participatory governance structure and long term strategy of full user participation in decision-making argues strongly in favour of Humboldt Exchange Dollars being scored as Fully IN for the PID set. The overall result indeed led to a total score of 14, which is fully IN the set, although there were some ambiguities. Classification problems involved distinguishing between potential revenues donated to charities which served non-local clients, and revenues invested solely in the local community, since there are currently no actual seigniorage revenues.

Humboldt Exchange Dollar data points to open yet well-organised decision-making processes in both the Humboldt Exchange and its parent community institution, DUHC. Funding shortfalls are made up by the parent community institution, but any future seigniorage revenues will also go back into the community. Allowing community volunteers to shape decisions at the institutional level allows grassroots players a stake in the currency. These processes not only assure continued sharing of seigniorage revenues and currency issuance decisions but also make it possible to consider changing the backing of Humboldt Exchange Dollars in the future, should stakeholders desire to do so. The internal processes of the Humboldt Exchange thus allow Humboldt Exchange Dollars wide latitude for shared governance.

5.2.3.2 Internal Governance of Time Dollars

While Time Dollars are issued through individual Time Banks, internal Time Bank priorities are set by each community when it establishes its Time Bank, according to Time Dollar Institute guidelines. Time Dollar data seems to indicate a mixture of individual member currency issuance control and group control of currency related decision-making, allowing flexibility in the decision-making process. Despite initially unclear raw PID data, Time Dollars are fully IN the set of Participatory Internal Decision-making currencies by a comfortable margin. Although based entirely on time volunteered in the local community rather than on market style transactions, Time Dollar data seemed surprisingly at first to lead to a rather closed internal governance structure, since there is no seigniorage revenue from printed notes, and frequently no cash fees at all as with the Chicago Suburban (2009a) and Mid Maine Time Banks (2009). Paradoxically, the resulting null score for shared seigniorage would distort Time Banks PID scores by artificially lowering them in comparison to MoE emphasising currency institutions. This is due to the fact that although Time Banks generate no extra revenue via seigniorage, which physical scrip issuing MoE currencies do, Time Banks are explicitly dedicated to community volunteerism, while other currency institutions may or may not be. However Time Banks do sometimes charge various types of fees, discussed shortly, to which the same shared seigniorage standards can be applied.

Table 5.8: Processed Time Dollar Internal Governance Data

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Internal Governance	Score	Time Banks
Shared Seigniorage		
Seigniorage revenues reinvested as shareholder dividends or profit	1	
Seigniorage revenues split with National Treasury	2	
Seigniorage revenues shared between currency holders	3	
Seigniorage revenues donated to non-local charity	4	
Seigniorage revenues invested in local community	5	5
Shared Seigniorage tally:	S. total	5
Shared Issuance Decision-making		
Issued by Private Firm or Individual without public consultation	1	
Issued by National, supranational or international Governmental Authority	2	
Issued by publicly chosen or elected Local Authority	3	
Issued via elected management committee of Community, Civil Society Group or local business	4	4
Issued via open walk-in vote of community or Civil Society Group	5	
Shared Issuance tally:	I. total	4
Shared Choice of Backing		
Fiat currency with no user decision-making participation or representation	1	
Fiat currency with limited user decision-making participation	2	
Backed by commodit(ies)y, no user decision-making participation or representation	3	
Backed by cash or commodities, limited user decision-making participation	4	
Backed by both commodity and cash redemption choice with full user decision-making participation	5	5
Shared Choice of Backing tally:	B. total	5
The currency's long-term strategy is user consensus based with open membership direct participation	Fully IN	
Total PID score	45	14
Percentage 'IN' the set of PID Currencies:	100%	100%
Data Sources: Interview data http://www.timebanks.org/faqs.htm#bartering http://www.timebanks.org/documents/IRSRuling-TimeDollars.doc http://www.timebanks.org/types-of-time-banks.htm http://www.timebanks.org/documents/HowToManual.pdf	Total:	100% PID

Weighing potential data distortion against community oriented Time Dollar Institute guidance of Time Banks, Table 5.8 shows Shared Seigniorage scoring 5, explained below. Since Time Dollars are allotted on the basis of service donated to the Time Bank, measured in hours, they reinforce community interaction and local management of Time Bank concerns, meriting a score of 4 for Shared Issuance of Time Dollars. Finally the choice of backing is limited only by the availability of goods and services in the community, and shared with a time currency since any good or service earned is chosen on the basis of amount of time given in service, resulting in a Shared Choice of Backing score of 5. Given the potential restrictions a time broker could place on full user participation and decision making, it remains unclear from the raw data whether Time Dollars can be scored by default as Fully PID.

While Table 5.8 shows the Total PID score for the Time Dollar of 14, placing Time Dollars fully IN the set of currency institutions which facilitate Participatory Internal Decision-making, ambiguities arose in two areas during data processing for US Time Banks and the Time Dollar Institute. First

the apparent lack of seigniorage revenues due to the non-physical nature of this currency had to be resolved, since administration fees are frequently charged in hours by Time Banks, creating a form of seigniorage revenue generated by the use of the currency on a par with that of printed note revenue for physical circulating currencies. This seigniorage revenue is redistributed to benefit community projects supported by the Time Bank, meeting the local community criterion investment, thus scoring 5 for fully shared seigniorage. Second, the intrinsic natural limit on issuance, namely time, limits institutional options on deciding what quantity of currency to issue, since each person has the same number of hours in every week, though prioritised differently. While hours can be valued differently based on the service being donated, as is apparently done in some Time Banks in the UK, none of the Time Banks interviewed in this study chose to follow that example, since they preferred to follow the Time Dollar ethos of egalitarian hourly service. Nevertheless, hours can also be donated and shared among Time Bank members (Rowden, 2009) which creates a greater level of flexibility in issuing Time Dollars. Hence, as a grassroots community sponsored currency institution, the Time Dollar Institute and derivative Time Banks meet the criteria for full PID.

The data analysis holds several implications for the Shared governance of Time Dollars. Internal processes can affect currency functioning by affecting the circulation of hours between and within individual Time Banks, thus affecting the exchange of Time Dollars and their ability to store future value. Some Time Banks are expanding the ability of Time Dollars to circulate as a limited MoE whilst primarily acting as a SoV, promoting the sharing of the resulting Time Dollar seigniorage revenues among community members. While it is the individual Time Bank member who effectively issues this currency by performing services in the community, the policies which govern Time Dollar distribution also affect issuance decisions. Those decisions are taken as a group by members, making currency issuance essentially an activity shared between individuals and the group as a whole, resulting in a high degree of shared currency issuance. Likewise since Time Dollars backing is mostly in locally donated services, though there are also increasingly goods available as well in some Time Banks, there is a locally defined range of backing choices for Time Dollar redemption. In conclusion, while the highly community-specific setup of each Time Bank allows variations, Time Dollar Institute core values provides standardisation among Time Banks from Maine (2009) to Illinois (2009a) to California (2009b) which exhibit high potential for SMG and are fully IN the set of Participatory Internal Decision-making currencies.

The following conclusions can be drawn from community-based currency internal data with regard to SMG. Humboldt Exchange Dollars have a total SMG score of 14, which is fully IN the set of PID Currencies. This resulted, with little ambiguity, in a high potential degree of shared governance, implying that community-based institutions have wide latitude for power sharing. Flexible grassroots decision-making led to both Time Dollars and Humboldt Exchange Dollars being Fully IN the set of PID Currencies. The conclusion for community-based currency institutions is therefore similar for currencies emphasising MoE or SoV: either functional emphasis can allow high levels of shared internal monetary decision-making.

5.2.4 Internal Governance of Privately Issued Loyalty Currency: Deli Dollars

Deli Dollars demonstrates the influence of business priorities on the shared governance potential of a loyalty currency. This particular loyalty currency is special since it had community support, being privately issued by a for-profit local business, but evolving into a community currency. The community support for the local business which issued the Deli Dollar may be a key factor in pushing this loyalty currency and others to higher potentials of SMG. Data scores are based on Deli Dollar business status and options that Deli Dollar users had in choosing how to redeem the currency.

Table 5.9: Processed Deli Dollar Internal Governance Data

Internal Governance	Score	Deli Dollars
Shared Seigniorage		
Seigniorage revenues reinvested as shareholder dividends or profit	1	1
Seigniorage revenues split with National Treasury	2	
Seigniorage revenues shared between currency holders	3	
Seigniorage revenues donated to non-local charity	4	
Seigniorage revenues invested in local community	5	
Shared Seigniorage tally:	S. total	1
Shared Issuance Decision-making		
Issued by Private Firm or Individual without public consultation	1	
Issued by National, supranational or international Governmental Authority	2	
Issued by publicly chosen or elected Local Authority	3	
Issued via elected management committee of Community, Civil Society Group or local business	4	4
Issued via open walk-in vote of community or Civil Society Group	5	
Shared Issuance tally:	I. total	4
Shared Choice of Backing		
Fiat currency with no user decision-making participation or representation	1	
Fiat currency with limited user decision-making participation	2	
Backed by commodit(ies)y, no user decision-making participation or representation	3	3
Backed by cash or commodities, limited user decision-making participation	4	
Backed by both commodity and cash redemption choice with full user decision-making participation	5	

Shared Choice of Backing tally:	B. total	3
The currency's long-term strategy is user consensus based with open membership direct participation	Fully IN	
Total PID score	45	8
Percentage 'IN' the set of PID Currencies:		30%
Data Sources: Interview Data http://www.smallisbeautiful.org http://www.berkshares.org	Total:	30% PID

In contrast to its high profile as a community supported loyalty currency, Table 5.9 shows Deli Dollars to have been less than fully PID. Seigniorage revenues from forward purchased Deli Dollars went back into the local business, and so the currency scored 1 for shared seigniorage. Despite questions of how much actual issuance decision-making input the community had, high levels of community support made it reasonable to score 4 for Deli Dollars in the Shared Issuance category as a local business. The final category of shared backing choice is relatively straight forward given the fact that the forward sold notes promised redemption for products retailed by the business, which puts profits back into the business and although the business benefits the community, it remains in the hands of the proprietor and so cannot be considered by default to be Fully IN the set of PID Currencies. The degree of shared governance displayed by a loyalty currency may generally depend on the cooperative context of business and community where it is located. For this reason, both national RFs and scale must also be taken into account to understand the overall shared governance level of each loyalty currency.

Processing Deli Dollar data juxtaposed institutional and community goals. On the one hand, Deli Dollars were a loyalty currency primarily intended to raise capital for moving Frank's Deli. On the other hand, Schumacher Society support entailed community access, thereby increasing shared decision-making. Deli Dollars scored a total of 1 point for Shared Seigniorage, 4 for Shared Issuance decision-making, and 3 for Shared Choice of Backing. The PID total score for the Deli Dollar was 8, putting it neither IN the set of PID Currencies, nor completely OUT of the set. A score of 8 yields the Participatory Internal Decision-making level of 30%. This is probably higher than the average loyalty currency would score, based on the community support for Deli Dollars, presumably allowing enhanced customer feedback and mutual support between this popular local business and the community. Community support for Deli Dollars probably increased its overall potential for shared governance beyond that of other loyalty currencies, but further investigation is needed beyond the scope of this thesis.

The effects of Deli Dollar internal governance on the outcome of its overall shared governance depend on decision-making and scale factors. The evolution of Deli Dollars as a loyalty currency

seems to have been influenced by the store´s popularity. This appears to have encouraged a higher level of shared governance. Despite its founding by a for profit local business, the Deli Dollar founder's involvement of community input in the issuing of the currency gave it a higher level of shared issuance decision-making. This use of community participation can be encouraged by any loyalty currency where internal processes have sufficient flexibility to allow community input. Choice of backing was, naturally, more restricted. Nonetheless, such openness merited a score of 30% PID rather than what would typically be a score entirely OUT of the fully Participatory Internal Decision-making set for most loyalty currencies. Thus the Deli Dollar shows that even a currency founded by a for-profit entity can potentially reach high levels of shared governance.

5.2.5 Internal Governance Process Data Section Conclusion

Figure 5.2: Participatory Internal Decision-making (PID) Scores
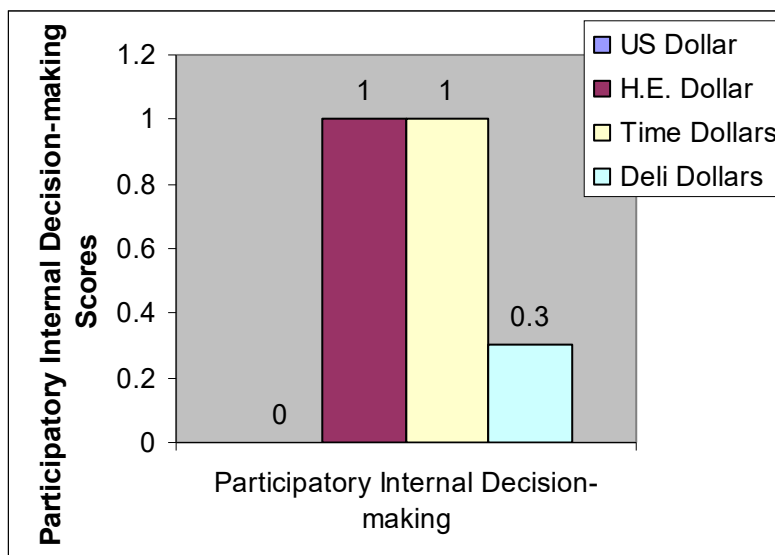
To summarise this section on Participatory Internal Decision-making (PID), Figure 5.2 briefly revisits results for each currency. The US Dollar, which Figure 5.2 and Table 5.6 show does not allow any participatory decision-making to most stake-holders, thus scores 0 for facilitating participatory processes. This is the lowest score in this study, and is also completely OUT of the PID set. By contrast, both community-based Humboldt Exchange Dollars and Time Dollars are fully IN the PID set, while Deli Dollars being neither IN nor fully OUT of the set scored 30% PID. From highest to lowest in Figure 5.2, both community sponsored currencies score highest, being fully PID, while business-sponsored loyalty currency Deli Dollars fell in between, and the US national currency falls entirely out of the PID set. Table 5.7 shows that Humboldt Exchange Dollar

PID is based on completely local distribution of seigniorage revenues, fully open issuance decision-making meetings, but with backing limited by the peg to the US Dollar. Time Dollars, by contrast in Table 5.8, though also allowing completely local seigniorage distribution, have a less open issuance policy by virtue of the very nature of Time based currencies. Compensating for that difference however is the fully participatory choice of currency backing facilitated by the redeemability of Time Dollars for any goods or services offered through participating Time Banks. Thus effectively the PID scores for Time Dollars and Humboldt Exchange Dollars result in a quite similar level of access to internal governance processes for most currency users. These currencies both facilitate greater levels of access than either the US Dollar or Deli Dollars due to their more open internal structures. This is despite the fact that Deli Dollars, which Table 5.9 shows allowed relatively little internal process access, were actually a smaller scale currency than either of the two community sponsored currencies. Clearly small scale alone therefore does not facilitate participatory processes, yet community-based institutional sponsorship does. Later sections explore the possible relationship between national RFs and internal institutional processes, focusing on how that relationship affects SMG. Beforehand, there is an examination of the potential influence of scale upon the governance, both external and internal, of currency institutions.

5.3 Scale Data

The limited scope of this project confined it to one country. The currencies reviewed were chosen because they represent examples of currencies traded in the USA. The US Dollar as legal tender fills all monetary functions in the United States. It is also used globally as a UoA, MoE and SoV. Humboldt Exchange Dollars represents a regional MoE sponsored by a community-based institution. Time Dollars, by contrast, are time based and in most cases can only be exchanged between other members of the same Time Bank. Although some Time Banks do now exchange hours with other Time Banks, circulation remains limited, keeping Time Dollar emphasis on SoV. Deli Dollars, which evolved into a community MoE, no longer exist but remain the best example of a loyalty program which became exchangeable between currency users, rather than simple redemption for goods or services, as traditional loyalty programs are. The scale data for each of these currencies will be processed into a set of scores as shown in Table 5.10 below, facilitating scale comparison between currencies.

Table 5.10: Scale as Functions of Money at Various Geographical Ranges

	local (5 mile Walking Distance) **1**	City/County-wide **2**	region **3**	national **4**	supra-national **5**
The currency is used as a UoA **1**	2	3	4	5	6
The currency is a MoE **2**	3	4	5	6	7
The currency is a MoP **3**	4	5	6	7	8
The currency is used as a SoV **4**	5	6	7	8	9
The currency is convertible to national and supra-national money **5**	6	7	8	9	10

Scores are derived from the scale matrix by ticking the converging box for an applicable monetary function (vertical axis) at the appropriate geographical distance (horizontal axis). Currency scale scores can range from a minimum of 2 to a maximum of 40 where 2 is the smallest possible scale currency and 40 is the largest possible scale currency. Note that no currency circulating below the national level for which only two monetary functions are applicable can score more than 11, and conversely any convertible currency circulating at or above the regional level which acts as a UoA, MoE and SoV will score at least 24. Therefore scores between 2 and 12 will be counted as fully IN the set of Special Purpose Currencies (SPCs), while scores between 24 and 40 will be counted as fully OUT of the set of SPCs. Visually these fall inside the upper right corner triangle formed by the 4´s diagonal from (1,3) to(3,1), and the lower left corner triangle formed by the 8´s diagonal from (3,5) to (5,3) respectively[12]. It should be pointed out that the sums on the diagonals are the same because various combinations of currency functions at different distances are equivalent for all practical purposes, as the reader will recall from section 2.5.2 of Chapter 2. Currencies with a score between 12 and 24 will be partially in and partially out of both sets with 18, the midway point, as the 50% score. Remaining scores had to be set based on judgement of degrees of scale. Hence currencies with a score of 13 are .95 or 95% of a percent SPC while a score of 14 is 90%, 15 is 80%, 16 is 70%, 17 is 60%, 19 is 40%, 20 is 30%, 21 is 20%, 22 is 10% and a score of 23 is 5% SPC. While the initial working hypothesis was that currencies closer to General Purpose Money, or completely OUT of the SPC set, would be favoured by national RFs, this turned out not to be the

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[12] Clearly, any currency with ALL appropriately ticked boxes appearing completely within only one or the other of these triangles is automatically either Fully IN or Fully OUT of the SPC set, respectively.

case. Hence, the area of scale can offer some interesting surprises. There are certain areas around which the data may all look quite similar. The IRS requires all taxable currencies to be pegged to the US Dollar, making every circulating currency convertible to the US Dollar. While this influences scale by skewing MoE currency scores toward the General Purpose end of the scale spectrum, implying that non-MoE currencies may tend to be SPCs, it remains to be seen to what extent scale influences SMG.

5.3.1 Scale Data for National Currencies: The US Dollar

The US Dollar is used across the USA as the domestic currency, shown in Figure 5.3, and as a global reserve currency, making the US Dollar by default a very large scale currency. The question of how scale impacts the SMG potential of the Dollar is investigated through US Dollar decision-making processes as affected by scale. Chinn (2005) points out that the US Dollar must cope with the tensions of meeting the needs of US citizens, as the national currency, and the effects of its functions outside of the USA.

Figure 5.3: US Circulating Currency

Source: Anon, nd. *United States One Dollar Bill* [online]. http://www.munic.state.ct.us/BURLINGTON/us_one_dollar_bill/us_one_dollar_bill.htm
    [Accessed 13/2/2009].

How a currency institution placed into this position can fare in terms of potential for sharing monetary governance decisions can be analysed through the various functions of money it covers in

conjunction with its geographical transaction distance. The data for the US Dollar will apply this process, as described in previous sections.

Table 5.11: Processed US Dollar Scale Data

US Dollar	local (Walking Distance)	City/ County -wide	region	national	supra- national	Scale Score	
The currency is used as a UoA					y	6	
The currency is a MoE					y	7	
The currency is a MoP				y		7	
The currency is used as a SoV					y	9	
The currency is convertible to national and supra-national money					y	10	% SPC:
Total Score:						39	0
Data Source: Solomon (1996)							

Table 5.11 shows US Dollar scale, which is the largest currency surveyed in this thesis. The US Dollar also presents a bit of an anomaly for a national currency because it serves as both a national and world-wide UoA. Hence the US Dollar as a UoA at both national and supra-national levels scores 6. As a MoE for domestic and global transactions, US Dollar scores 7, again in the supra-national column. The US Dollar is a Means of Payment (MoP) for taxes and fines in the USA and in dollarised nations, but most governments prefer payment of taxes or fines in their own national currency rather than US Dollars, so it is rated at 7 in the national column for MoP. Since it is also used around the world as a reserve currency, it is a supra-national Storage of Value and scores 8. Finally, the US Dollar, as a currency which is convertible worldwide into other national currencies, it is placed in the supra-national column with a score of 10. The multinational and domestic use of the US Dollar gives it worldwide functional scale in every way except as a MoP, not counting nations which have unilaterally dollarised since they have no seats on the Fed governing board. Thus the US Dollar is fully General Purpose money.

Table 5.11 shows how the US Dollar's use as a UoA for debt, expense comparisons and worldwide MoE and SoV gives it supranational scale in all but one category, leading to a score of 39 which is completely OUT of the SPC set. While a large scale UoA can provide a convenient means of counting across wide geographical areas, Keynes (1930) and Gesell (1906) agreed that MoE and

SoV functions conflict, encouraging hoarding and adding to the pressure on the currency to be all things to all people. Thus the scale of the US Dollar may lower its potential for SMG. In addition to international pressures on the Dollar, domestic needs within the USA must be met by a national currency which is spread across a wider area than most stakeholders can meaningfully hope to influence. That is not to say however that a small scale currency institution automatically has a higher potential for SMG. The next currencies examined are smaller in scale, but have different limiting factors on functionality which may impinge on their ability to facilitate shared decision-making.

5.3.2 Scale Data for Community-Based currencies: Humboldt Exchange and Time Dollars

The two most common community-based currencies in the USA emphasise the MoE function and the SoV function. Those currencies which emphasise the MoE function are likely to have larger circulation and to be more exchange or trade oriented. By comparison currencies which emphasise the SoV function are likely to be quite small in circulatory range and to be more stability oriented. The Humboldt Exchange, by keeping its currency circulating within the local economy, acts as an incubator for local businesses. In this way many advocates of non-national currencies also hope to encourage trust in local communities and self confidence in new start-up businesses. Time Dollars by contrast are SoV based, emphasising stable value over time. Value stability is achieved by using a scarce commodity, in this case time which is one of the most limited commodities, particularly in countries where workers lack leisure time, as the basis for the currency. Both Humboldt Exchange Dollars and Time Dollars are community-sponsored and are expected to fall into the set of SPCs. Data for Humboldt Exchange Dollars follows.

5.3.2.1 Scale Data for Humboldt Exchange Dollars

Humboldt Exchange Dollars are a local community oriented currency based in Humboldt County, California in the town of Eureka, as shown by Figure 5.4 in the design of the currency notes:

Figure 5.4: Humboldt Exchange Circulating Currency
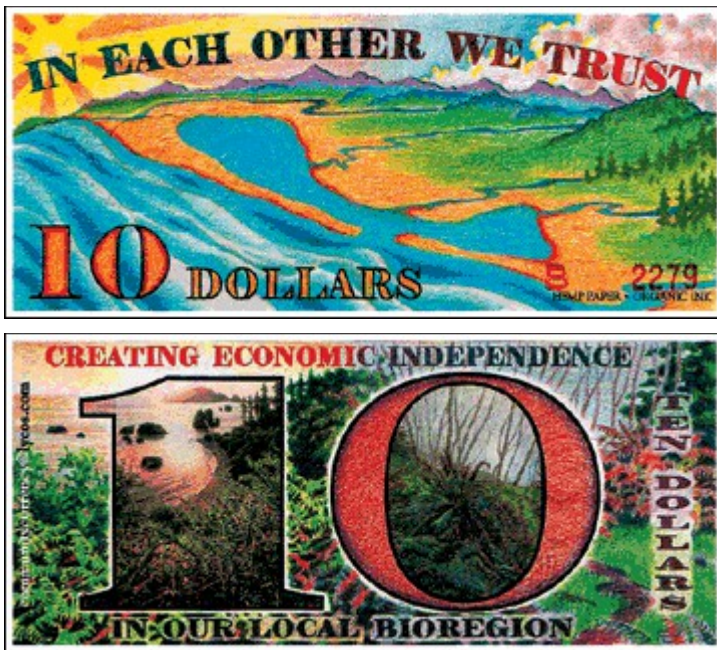
Looking at the range of Humboldt Exchange Dollar usage for each monetary function can provide insight into how the scale of such a fully community-based currency can affect its potential for SMG.

Table 5.12: Processed Humboldt Dollars Exchange Scale Data

H.E. Dollars	local (Walking Distance)	City/ County -wide	region	national	supra-national	Scale Score	
The currency is used as a UoA		y				3	
The currency is a MoE		y				4	
The currency is a MoP						0	
The currency is used as a SoV	y					5	
The currency is convertible to national and supra-national money		y				7	% SPC:
Total Score:						19	40.00%
Data Source: Interview Data							

Table 5.12 shows Humboldt Exchange Dollars as a UoA in the area of Eureka, in Humboldt County, California and across the local county, scoring 3 in the county-wide geographical scale, and with circulation across Humboldt County, scoring 4 for MoE. Humboldt Exchange Dollars are not accepted as an official MoP in any jurisdiction to date, and while not intended primarily for long-term value storage, their acceptance by community members allow them to hold value as long as trading continues, hence the score of 5 at walking distance rather than the full circulating range for

SoV. Finally, Humboldt Exchange Dollars are convertible to the US Dollar, scoring 7 in the county-wide column. Thus, in all but the SoV range, Humboldt Exchange Dollars receive scores for a county scale currency, with a more restricted score for SoV. This gives an overall scale of 19 placing it between Fully General Purpose money and Special Purpose Currencies (SPCs) at about 40% SPC, or 60% General Purpose.

Humboldt Exchange data analysis must take both local and national monetary linkages into account. Community institutional control of mid-scale currencies like Humboldt Exchange Dollars may allow greater direct stakeholder access to decision-making processes. Nevertheless, Humboldt Exchange Dollars convertibility to national currency widens the scale of this community currency, which may reduce stakeholder choice over currency backing. While increasing the scale can have advantages, as may the link with general purpose money, it is the community institutional guidance which is more likely directs Humboldt Exchange Dollars toward higher levels of SMG.

5.3.2.2 Scale Data for Time Dollars

As a currency deliberately designed to remain small scale and grassroots, Time Dollars should be expected to be within the set of SPCs. While it is not designed to function as a MoE, there are still features which allow it to be exchanged under limited circumstances. The practical implementation of time storage determines how widely Time Dollars can be used in the role of a SoV.

Table 5.13: Processed Time Dollars Scale Data

Time Dollars	local (Walking Distance)	City/county-wide	region	national	supra-national	Scale	Score
The currency is used as a UoA	y					2	
The currency is a MoE	y					3	
The currency is a MoP						0	
The currency is used as a SoV			y			7	
The currency is convertible to national and supra-national money						0	% SPC:
Total Score:						12	100
Data Source: Interview Data							

Table 5.13 shows Time Banks to have a very limited scale due to the time based nature of the currency. Time Dollars are counted in hours as a UoA at each Time Bank, hence the score of 2.

Although not the general use of Time Dollars, hours are sometimes traded between individuals making them a limited MoE, scoring 3. Time Dollars are not usable to pay fines or taxes and are intended to be used as a SoV in the local community, sometimes being traded between Time Banks in neighbouring areas, hence the regional score of 7 for SoV.

While Time Dollars are not convertible to other currencies, borrowing of ideas between Time Banks in the USA, the UK and other countries has given them wide influence. Although individual Time Banks may vary, Time Dollars, standardised through Cahn's (2006) Time Dollar Institute core values, present the most clearly small scale, with a fully SPC score of 12. The variability of market value against hours of service delivered may prevent both conversion of Time Dollars into national currency and use as a MoP for taxes, yet that small range may allow greater stakeholder institutional access at the expense of some flexibility, while retaining a high potential degree of SMG for Time Dollars.

To conclude this community-based currency section, different currencies emphasise different functions of money, as with Humboldt Exchange and Time Dollars. There may be other SoV emphasising currencies which could have different scale tendencies, but Time Dollars are thus far the only widely adopted primarily SoV community-based currency. As a growing community sponsored currency institution, the Humboldt Exchange shows high potential SMG. Its link to general purpose money may allow it wider circulation than SPCs such as Time Banks. Time Banks on the other hand are individually founded within neighbourhoods, giving stakeholders greater access despite the limited number of areas where the currency can be spent directly. Both community-based currencies reviewed seem to have a high potential for SMG. The next currency, Deli Dollars, was community supported despite being business sponsored. Regardless of Deli Dollars ability to function in both categories however, its business institutional sponsorship gave it different priorities than community-based institutional sponsorship, potentially affecting both scale and SMG.

5.3.3 Scale Data for Privately Issued Loyalty Currency: Deli Dollars

Deli Dollars, not to be confused with current similarly named loyalty programs by other businesses, were relatively unique, issued in 1989 with support from the E. F. Schumacher Society (1989). The

Schumacher Society is described by Hannum (2006) as a Great Barrington, MA based educational non-profit organisation, thus making the Deli Dollar a community supported loyalty currency, as Deli Dollar notes showed. Its circulation within the local community came from local support for Frank's Deli, illustrated by the note in Figure 5.5. Nonetheless, that business foundation also linked it to larger scale monetary institutions, bridging the gap between general purpose money and SPCs.

Figure 5.5: Deli Dollar Circulating Currency

Source: Society, E.F.S., 1989. *Local Currencies* [online]. http://www.smallisbeautiful.org/local_currencies.html [Accessed 13/2/2009].

Raw Deli Dollar scale data presented somewhat unclear results. The difficulty arises when deciding whether Deli Dollars or any other loyalty currency, is convertible into a national currency. Most loyalty points are redeemable for goods and services, as were Deli Dollars. But when such programs become exchange currency as Deli Dollars did, value may change, resulting in further scale changes.

Table 5.14: Processed Deli Dollars Scale Data

Deli Dollars	local (Walking Distance)	city/ county -wide	region	national	supra- national	Scale Score	
The currency is used as a UoA		y				3	
The currency is a MoE		y				4	
The currency is a MoP						0	
The currency is used as a SoV						0	
The currency is convertible to national and supra-national money						0	% SPC:
Total Score:						7	100
Data Source: Interview Data							

Table 5.14 shows how Deli Dollars were a UoA in the community, scoring 3 as a city or county-wide UoA, and 4 as a MoE. Deli Dollars were not accepted as a Means of Payment (MoP), and due to their time limited offerings were not usable for storing value. The origins of Deli Dollars as

community supported yet business sponsored raise questions regarding its scale, on the one hand having had a small circulation area, giving it a rather low score for Scale in the functions of UoA and MoE, yet on the other hand linked to general purpose money through business sponsorship. The small range of circulation and lack of direct convertibility argue strongly enough for Deli Dollars to have been placed IN the SPC set despite the institutional link to General Purpose money. While the scale appears to have been quite small, its business sponsorship had other implications. Deli Dollars, although an SPC, was linked to general purpose money, and as a business sponsored loyalty currency this link may affect potential stakeholder access to decision-making. As with community-based currencies, limiting circulation to a small geographical area allowed greater currency user access to decision-makers. Yet this access could imply a tension between full community participation and the expected demands of business profitability. Sharing seigniorage decisions, loyalty issuance decision-making privileges and currency backing choices may hamper the ability of the business to make a profit, which is normally a key business goal and may not take precedence over community input if business survival is at stake. These sound and reasonable conditions imply that however community oriented a loyalty currency might be, it remains institutionally limited in its overall potential for SMG.

While Deli Dollars showed flexibility as a community-based loyalty currency, some data ambiguity means it could have been scored just slightly outside of the SPC set. Deli Dollars were not directly convertible to the national currency, resulting in a smaller scale which may have kept Deli Dollars more community accessible. The variance in its scale may also have lent it greater overall potential for SMG, while at the same time, though Deli Dollar's small scale kept it community supported, that scale may also limited its usability. A comparison of all currency scales studied thus far may enhance understanding of how scale impacts SMG.

5.3.4 Scale Comparison Section Conclusion

Currency scales tended to meet expectations based on each currency circulation range. Individually, the functions and the shared governance potential for each currency is affected by its scale. Taken as a whole, the different scales of each currency and the sets into which they fall may provide a means of understanding how the institutional links between currencies can affect SMG.

Figure 5.6: Scale Comparison for All Currencies
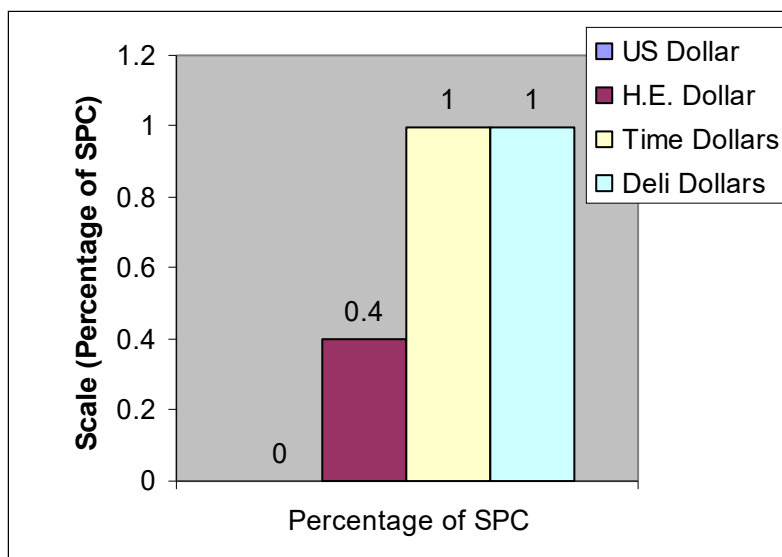
The scale of each currency, shown in Figure 5.6, can now be compared by institutional sponsor[13]. In broad terms, national currencies tend toward being Fully General Purpose money, as with the US Dollar, although investigation of other less widely used national currencies would be needed to confirm this. Community sponsored currencies also vary in scale, as MoE emphasising Humboldt Exchange Dollars fell relatively close to General Purpose money, at 60% general purpose, or 40% SPC, while Time Dollars (primarily SoV) turn out to be fully SPC. Therefore, as Humboldt Exchange Dollars show, community institutional sponsorship does **not** ensure SPC status. Furthermore, despite Deli Dollars institutional linkage to general purpose money through its for-profit sponsor, this widely business sponsored loyalty currency was firmly IN the SPC set. It is interesting to note however, that direct convertibility to national currency would have increased Deli Dollars scale just outside of the SPC set.

In summary, while smaller scale can indeed facilitate direct participation in institutional processes, institutional sponsorship also determines access. Small scale does **not** guarantee participatory decision-making, although small scale does appear to facilitate direct participation in decision-making if internal and external structures permit sharing. For this reason it is necessary to compare the ways in which national RFs and internal processes interact with currency scale in order to understand the implications for these three factors of SMG. Nevertheless, scale data shows that scale does influence currency decision-making. While scale is an important facilitating factor, other institutional factors interact with scale to shape the currency's level of SMG. A full analysis of these interactions is now possible, and follows in the upcoming chapter.

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[13] Note that the US Dollar, scoring 0% SPC, appears in the left hand column marked "0", but does not show as a column itself, due to that 0 percentage.

Chapter 6 – Analysis

Currencies are examined in the light of three sets of data: external (national) regulations, internal decision-making, and scale. Analysis of how the first two of these institutional influences interact with one another and how they affect the level of Shared Monetary Governance (SMG) is the main concern of this section. A preliminary summary of the information collected for four currency institutions reviewed in the USA begins each analytical section. However, at this point it is important to remind the reader (see Theoretical Chapter) of the differences between Participatory Internal Decision-making (PID) and SMG before beginning the analysis of each currency. The key components making up SMG are weighted equally between tolerance by national RFs, direct participation in internal decision-making and small institutional scale. Yet either the weight of external governance, via RF intolerance, or simple impracticability of scale can prevent a currency institution from being functionally viable. If one of these circumstances prevails, then that currency will still not be a practical vehicle for SMG in the 'real' world. Therefore interaction is analysed between external RFs, internal processes and scale as they affect overall levels of SMG.

To facilitate analysis two aids are used: sums and quadrants. A three part summation is used to show the overall level of SMG for a currency in comparison with other currencies. First, Tables 6.2-6.5 will show how adding the RF toleration score and the PID score yields a combined governance sum with a minimum of -1, and a maximum of 2. This sum is compared across currencies to show how national RFs and internal institutional decision-making interact to influence SMG from a governance perspective. Second, the analysis of interaction between internal institutional decision-making and currency scale, shown in Tables 6.8-6.11, is facilitated by adding the PID and SPC scores yielding a minimum of -1 and a maximum of 2. Third, analysing interaction between external regulations and currency scale combines scores for RF tolerance and SPC percentage with a minimum of 0 and a maximum Regulatory and scale interaction sum of 2, as the final set of Tables 6.14-6.17. Note that combining RF tolerance scores with scale scores, in which small scale currencies score higher, takes into account institutional scale in its ability to effectively allow full stakeholder participation. Thus national RF tolerance, PID and Scale are combined using tables giving minimum SMG scores of -1, and a maximum total SMG scores of 3, as described previously and shown again in Appendix 3.

The second analytical aid visually maps into which of four quadrants a currency could fall. Charts plotting each currency use one score as the X coordinate, another score as the Y coordinate to

visualise combined influences. Quadrants for the following section comparing RF with PID influence are illustrated in Table 6.1 below. The left hand quadrants indicate low PID, while the right hand quadrants indicate greater PID. Upper quadrants are more tolerated by national RFs while the lower quadrants are effectively discouraged. For example Quadrant A (the upper right hand quadrant), "Both PID and Tolerated" is formed by currencies which range between 50% to Fully tolerated by US RFs and between 50% and Fully PID currencies.

Table 6.1: Regulatory Framework (RF) Tolerance vs. PID Quadrants

	Participatory Internal Decision-making (PID)	
Tolerance by RFs	D (0,1)	A (1,1)
	C (0,0)	B (0,0)

Quadrant A: Currencies with BOTH considerable PID AND well RF tolerated
Quadrant B: Currencies with considerable PID but minimal RF toleration
Quadrant C: Currencies with BOTH low PID AND low RF toleration,
Quadrant D: Currencies minimal or no PID but well tolerated by RFs

6.1 National RFs vs. PID and Shared Monetary Governance (SMG)

This section compares combined governance *(External and Internal)*: RF tolerance against PID trends for all currencies, in relation to overall influence on SMG. RF and PID scores are added to create a combined governance sum allowing comparison of external and internal governance influences with scale. Quadrants are discussed from a governance perspective with the aid of the Table 6.1 described previously. Finally, a comparison of trends for all currencies, shown preliminarily in Figure 6.1, brings together previous analysis starting with the US Dollar.

Figure 6.1: Preliminary Comparison of External (National) RF Tolerance and PID
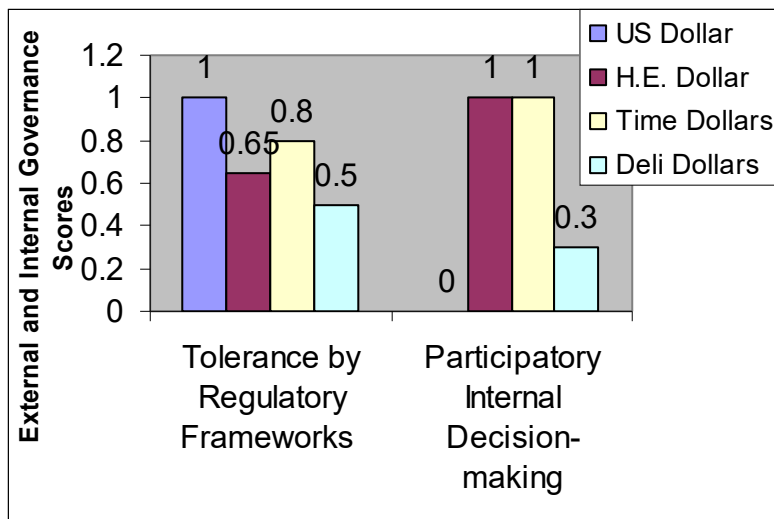
6.1.1 Regulatory Framework Tolerance vs. PID for the US Dollar

Internal institutional governance for the US Dollar is overseen by the Fed, the Treasury Department and, at a greater remove, Congress. Solomon (1996) notes RFs influencing all currencies circulating in the USA include the IRS, Securities and Exchange Commission (SEC), and laws passed by national and state authorities. The US Dollar is used in this work as the baseline currency for comparison purposes. It provides three main things in this role. First it gives consistency with the definition of a currency and its use in this thesis. Second it gives a large scale monetary institution for comparison. Third it provides a known reference standard against which other currencies may be understood more easily, despite differing from other currencies in this thesis. There may be different relationships between national RFs and internal processes due to its status as the US national currency and worldwide reserve currency, affecting comparison with other currencies. Relationships between external and internal governance are examined in the context of how both influences affect SMG for the US Dollar.

Table 6.2: US Dollar RF and PID Combined Governance Sum

Minimum Possible	RF Tolerance	PID	Governance Sum	Maximum Possible
-1	1	0	1	2

Table 6.2 shows the sum of the US Dollar's RF tolerance and PID scores give a Governance Sum of 1 from a possible maximum of 2. This combined governance sum will be used later for comparison

with all SMG factors together. The initial relationship between external and internal governance for the US Dollar seems to be inversely proportional. Full RF toleration of the US Dollar is paired with an almost complete lack of PID, implying that surrounding national regulations may exert pressure on internal decision-making processes. This is consistent with the independence of the US Federal Reserve. While other factors such as markets clearly have an influence, interactions between national RFs and internal institutional processes strongly affect the practical sharing of monetary governance. Analysis of these factors would be facilitated by larger data sample size, but given the uniqueness of many of these currencies, a much larger project would be necessary to fully investigate all influential factors.

Figure 6.2: US Dollar National Regulatory Frameworks vs. PID Quadrants
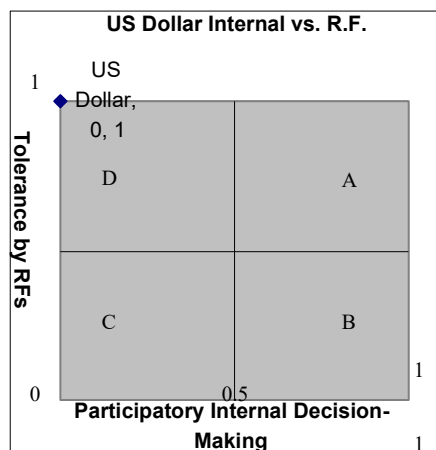
Figure 6.2 plots the comparison of RF tolerance toward the US Dollar with its internal institutional processes. Combining the data obtained from internal process and external RF data creates a coordinate pair placing the US Dollar in Quadrant D: (as described in Table 6.1) well tolerated by national RFs but with minimal PID. The US Dollar is atypical, unique in being a domestic currency which is used internationally as a reserve currency and UoA. Therefore, even with more flexible internal processes, the US Dollar might have difficulty implementing participatory decision-making due to pressure from international stakeholders.

6.1.2 Regulatory Framework Tolerance vs. PID for Community-based Currency Institutions: Humboldt Exchange and Time Banks

Figure 6.3 on the following page summarises the community-based currencies below. Humboldt Exchange Dollars' MoE emphasis may interact differently with national RFs than the SoV emphasis of Time Dollars.

Figure 6.3: Humboldt Exchange Dollar and Time Dollar RFs vs. PID Comparisons
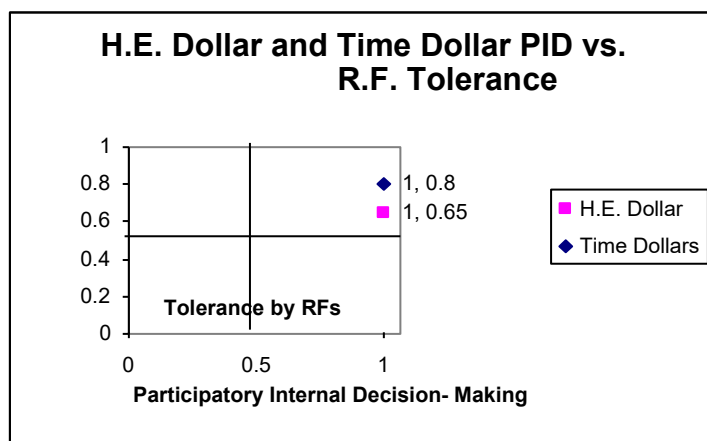
Humboldt Exchange Dollars' combined national RF tolerance and PID scores reflect circulation influence. The level of tolerance shown by national RFs for Humboldt Exchange Dollars may reflect organiser's efforts to avoid MoE competition with the US Dollar.

Time Dollars combined RF and PID score by contrast, reflect SoV influence. The RF tolerance for a mostly non-circulatory currency such as Time Dollars may allow greater latitude in its institutional processes for shared stakeholder input. A circulating MoE like Humboldt Exchange Dollars could potentially be seen as a threat to the national MoE. The two community sponsored currency institutions in Figure 6.3 are treated somewhat differently by national RFs, although they both have Full PID. Interaction between RF influence upon Humboldt Exchange Dollars and shared internal decision-making within the Humboldt Exchange impact heavily on its overall level of SMG.

6.1.2.1 Regulatory Framework Tolerance vs. PID for Humboldt Exchange Dollars

Humboldt Exchange Dollar institutional processes appear to cooperate closely with national RFs. As decision makers prioritise shared governance, regulators can either support those priorities or negate them in various ways. Table 6.3 shows sums of the governance scores illustrating this relationship for Humboldt Exchange governance influences.

Table 6.3: Humboldt Exchange Dollars RF and PID Combined Governance Sum

Minimum Possible	RF Tolerance	PID	Governance Sum	Maximum Possible
-1	.65	1	1.65	2

The impact of tolerance by RFs for Humboldt Exchange Dollars on shared PID score comparisons for Humboldt Exchange Dollars is unclear. Table 6.3 shows the combined sum of Humboldt Exchange Dollar national RF tolerance score and its PID score is 1.65 out of a possible total of 2, indicating fully PID and high tolerance by national RFs.

Figure 6.4: Humboldt Exchange Dollar National Regulatory Frameworks vs. PID Quadrants
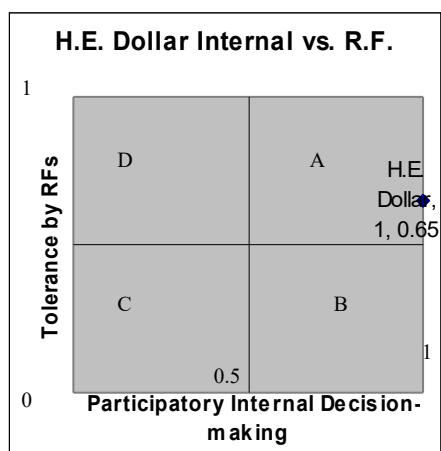
Humboldt Exchange Dollars seems to indicate a close relationship between US Regulatory Framework tolerance high PID levels. The combined sum of Humboldt Exchange Dollars national RF tolerance score and its PID score, which will be discussed shortly, is relatively high, showing potentially high SMG. That sum is illustrated by the plot in Figure 6.4 above using the national RF tolerance score as a vertical component and the PID score as the horizontal component (recall Table 6.1) to visualise the relationship between the two forms of governance.

Humboldt Exchange organisers have been careful to conform with US regulations surrounding currency creation. However, its non profit status which gives relief from securities reporting requirements may impose internal structural requirements. These requirements include organising a committee to manage and track institutional information, leading to a need for certain roles within the institution. Hence national RFs can limit direct institutional participation. On the other hand, national regulations for non-profit roles and accountability may enforce greater transparency and standard requirements which may lead to more participatory decision-making. As with the US Dollar, understanding these influences requires more contextual information.

Judging the influences of external RFs in comparison with the resilience of Humboldt Exchange internal decision-making participation is complex. Larger samples sizes from other currencies in the USA can provide firmer trend data. Figure 6.4 shows combined governance in Quadrant A of Figure 6.4, indicating high RF Toleration and PID for Humboldt Exchange Dollars. One compromise organisers make between increased community economic decision-making and external influence is the recommendation that transactions be half in Humboldt Exchange Dollars and half in US Dollars. This indicates that Humboldt Exchange Dollar organisers make strong efforts to present the currency as complementary rather than competitive with the national currency, the US Dollar. While regulators tolerate Humboldt Exchange Dollars based on this link with the US Dollar, they also influence Humboldt Exchange Dollar issuance indirectly by effectively limiting Humboldt Exchange Dollars circulation to via to the suggested ½ and ½ ratios. The link with general purpose money seems to directly reduce the level of community issuance control over Humboldt Exchange Dollars. Whether these observations are generalisable will be investigated for the community sponsored currency Time Dollars next.

6.1.2.2 Regulatory Framework Tolerance vs. PID for Time Banks

Time Bank comparisons must refer back to the Time Dollar Institute guidelines. The Time Dollar Institute, as described previously, is the basis for the institutional development of the Time Dollar which is issued through individual Time Banks in each local community. Time Banks are neither securities nor taxable, thus 'slip mostly under the radar' of US RFs. This in turn may increase flexibility of internal decision-making. The grass roots nature of Time Banks makes generalising Time Bank governance trends somewhat more variable.

Table 6.4: Time Dollars RF and PID Combined Governance Sum

Minimum Possible	RF Tolerance	PID	Governance Sum	Maximum Possible
-1	.8	1	1.8	2

The relationship for Time Dollars between national RF influences and internal institutional policy appears more cooperatively driven than with other currencies. With a PID score of 1 and RF toleration of .8, internal and external governance of Time Banks appears to be fairly closely coupled. Table 6.4 shows a combined governance sum for Time Dollars is 1.8 out of a possible 2, representing high potential SMG if it is not obstructed by scale issues. National RFs seem quite tolerant of Time Dollars, which are fully PID. While national RFs are key to determining which monetary institutions will survive, exercising influence on internal governance, other factors also influence currency governance.

Figure 6.5: Time Dollar National Regulatory Frameworks vs. PID Quadrants
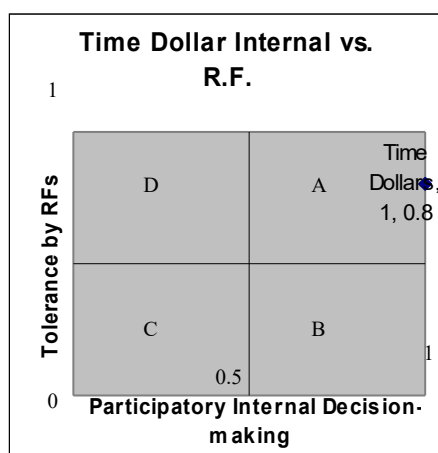
The limitations of Time Dollar data underscore the need for context to allow generalisation to other currencies. The small sample size reflects the small number of time based SoV currencies. Using Time Dollars PID and RF Tolerance scores as described previously in Table 6.1, Figure 6.5 shows the result in Quadrant A: well RF tolerated and high PID. The visual relationship between external and internal governance may not indicate a causal relationship. While this should generalise well to all Time Banks, as with all grassroots phenomena variations are always possible. Time Dollars high level of PID supports Fung's (2001) contention that small scale institutions encourage participatory governance. The fact that US RFs are reasonably encouraging toward Time Banks allows better chances that the open internal processes stay open.

The overall conclusion on tolerance toward community-based currencies by US RFs vs. PID comparisons is that US national RFs may actually favour such currency institutions. Adding RF and PID scores for Humboldt Exchange Dollars produces a sum of 1.65. The combined RF and PID score for the Time Dollar is 1.8. This shows a significantly higher combined governance score

and a potentially higher SMG level for Time Dollars compared against the other currencies reviewed so far, consistent with Figures 6.3, 6.4, and 6.5. Linkages between external and internal rule structures appear to exert compelling influences on currency institutional power sharing, but by cooperating with RFs institutions can achieve a level of partnership with the dominant general money institutions while retaining participatory input. While these scores are still subject to the influences of scale on practical sharing of governance, private currency issuance gives the final example of interaction between external and internal governance.

6.1.3 Regulatory Framework Tolerance vs. PID for Privately Issued Loyalty Currency: Deli Dollars

Deli Dollars, as a loyalty currency, were more closely tied to the business institutional model than to the public sector. Nevertheless they were traded enthusiastically in the community. They also seemed to have a closely coupled relationship between external and internal governance. Yet the outcome is different for the case of loyalty currencies than for community-based currencies.

Table 6.5: Deli Dollar RF and PID Combined Governance Sum

Minimum Possible	RF Tolerance	PID	Governance Sum	Maximum Possible
-1	.5	.3	.8	2

A comparison of the RF tolerance for the Deli Dollar against its PID shows how national regulations can influence the internal processes of a community supported loyalty currency. The Deli Dollar appeared to have a fairly closely coupled relationship between external and internal governance. Its PID score was .3, with relatively little participatory decision-making. The Deli Dollar RF tolerance score was .5, which shows low regulatory tolerance for this currency. Table 6.5 shows the sum of .8, indicating relatively low combined shared governance. Given the Deli Dollar's status as a loyalty currency it was obligated, quite appropriately, to contribute primarily to making a profit for its business oriented sponsoring institution, Frank's Deli in Great Barrington, MA. For this reason community participation in decisions could not take precedence over business objectives. This was entirely appropriate however it also limited PID. Previous reports on the Deli

Dollar portrayed it as a local community circulating currency. It may be true that it increased local economic health via local currency circulation, but what is largely neglected is the discussion of shared institutional decision-making. This neglect may be appropriate from a functional perspective given the loyalty currency purpose of furthering business objectives, but must be taken into consideration when arguing that these currencies increased community empowerment via shared voice and local decision making. It may indeed have increased local economic activity, but loyalty currencies seem unlikely to bring significantly higher SMG to all community stakeholders.

Figure 6.6: Deli Dollar National Regulatory Frameworks vs. PID Quadrants
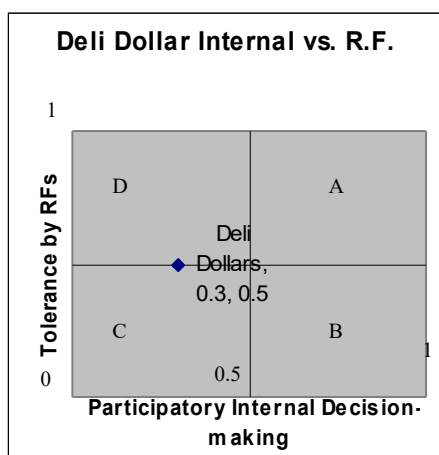
Deli Dollar trend predictions were limited by lack of data involving community supported loyalty currencies. However, not many loyalty programs would qualify under this thesis' definition as a currency since most loyalty points are not widely traded between non-customers as Deli Dollars were or even among business customers. While some loyalty point programs apparently do allow transfer of these points to other customers, this does not appear to be a widely enough spread practice in most cases to evolve into a thriving trade, as happened with Deli Dollars. Furthermore, no other well-known loyalty programs have been community supported as Deli Dollars were, although Seyfang (2004) cites a new community loyalty currency, the NU Spaarpas card, which has yet to be studied. The relationship between external and internal governance is appears just on the vertical RF tolerance border of Quadrants C and D (recall Table 6.1) as marginally tolerated with low PID in Figure 6.6. Low RF tolerance may also explain infrequent trading of loyalty points. The lack of explicitly community orientation may be a deciding factor in the lack of regulatory enthusiasm for the Deli Dollar. While imitations of the Deli Dollar do exist, community popularity of the Deli Dollar may have been unique to Great Barrington, MA, making generalisation to other

loyalty programs tenuous. Nevertheless, more data comparison for the effects of other influences is needed.

6.1.4 Competing Effect of National RFs and PID on SMG in the USA

To draw conclusions about the interaction between External and Internal Governance on SMG in currencies in the USA it is necessary to understand that there is a great variety of currency types, as Witt (2004) points out, as well as variation within each type of currency. While each currency faces its own pressures and is set in a unique context, the national currency provides a point of reference for non-nationally sponsored currencies. Although different currencies emphasise different functions of money, affecting currency institutional governance, the explicitly public orientation of community sponsored currencies contrasts with business institutional objectives reflected in loyalty currencies. It is helpful to view a comparison of external RF toleration against PID for all currencies. Table 6.6 shows RF Tolerance and PID scores for each currency and their totals. In summary, this analysis produced the following outcomes.

Table 6.6: Sums of Combined Governance Scores

	US Dollar	H. E. Dollar	Time Dollar	Deli Dollar
Toleration by RFs	1	.65	.8	.5
PID	0	1	1	.3
Gov. Total	1	1.65	1.8	.8

Interestingly, the US Dollar appears to confirm Kahler′s (2000) assertion of susceptibility to varying influences, falling between other currencies for external and internal governance. Out of a possible combined governance score of 2, the US Dollar scores 1 point for combined external and internal governance.

Humboldt Exchange Dollars are less polarised in terms of the relationship between external and internal governance than the US Dollar. Humboldt Exchange Dollars' combined governance score is 1.65. The relationship between external and internal governance for Time Dollars is even more closely paired.

Time Dollars have a combined score of 1.8 which gives the highest shared institutional governance score of all of the currencies reviewed.

Deli Dollars seemed to share the same degree of external to internal closeness as Time Dollars, but had a combined score of .8, considerably lower than Time Dollars combined score. This may indicate an overall lower shared governance score but will not be known without the addition of the influence of scale.

The numerical distance between external and internal governance scores may illustrate some of the influences internal processes can have on external regulations and vice versa. On the other hand, inconsistency of these gaps shows that summing up the RF tolerance scores with the PID scores may give a closer indication of the actual level of stakeholder input. Thus far trends point to a reasonably high correspondence between favourable RFs and higher PID scores for explicitly community sponsored currencies in the USA. Pressure on institutions to conform to national regulations may push currencies to higher shared governance levels, but this does not explain why the low PID score of the Deli Dollar was accompanied by less tolerant RFs. This is particularly intriguing considering the completely polarised relationship between external and internal governance for the US Dollar, though acknowledging its uniqueness as a national currency.

Figure 6.7: External and Internal Governance Quadrants for All Currencies
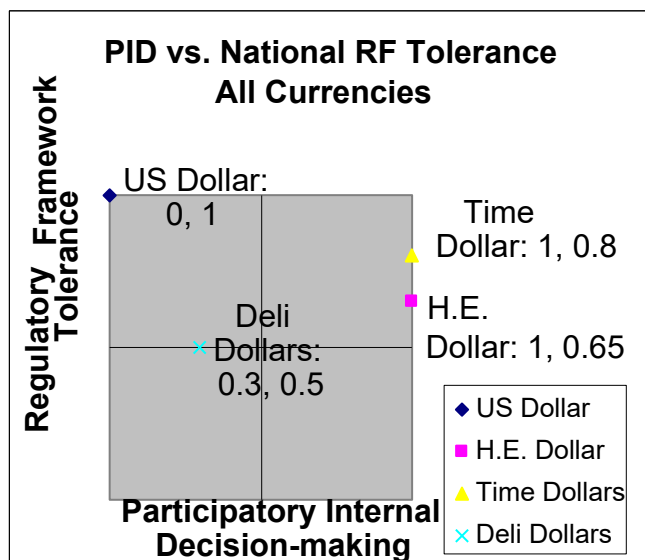
Figure 6.7 depicts the combined governance quadrants for each currency reviewed in the USA. The US Dollar falls in Quadrant D, which is designated as well tolerated but low PID. Both community-based currencies reviewed fell into Quadrant A as both well tolerated and substantial PID, while Deli Dollars were more difficult to place, falling between Quadrants C and D, being

marginally tolerated by US RFs and relatively low PID. Though further studies involving more US currencies would be helpful, it is also useful to look more closely at other aspects of governance for clues. This is done in upcoming chapters, starting next with the relationship between internal processes and scale.

Before moving on to the next set of analyses, it is important to bring together implications from earlier analysis of how external regulations affect internal processes. Internal institutional processes may affect national regulatory treatment of institutions, with these interacting influences in turn affecting SMG. Shared institutional currency decision-making, particularly with regard to how RFs shape internal processes, has been the focus of this section. Each currency institution bears the tensions between external and internal governance in a different way.

The US Dollar is perhaps most clearly influenced institutionally by US national RFs and the international monetary system, international use of the US Dollar making its stability important for both domestic and international needs. Secretary Edwin Truman's testimony before Congress (2000) exemplifies international effects on internal US Dollar seigniorage decisions. As an independent central bank, issuance decisions by the Fed require little public transparency or accountability. Likewise, President Nixon's decision to abrogate gold backing lacked stakeholder input. While conceding that full stakeholder participation was impractical given the large scale of the US Dollar, nevertheless this decision impacted US Dollar users around the world. Whether a smaller scale currency allows more participatory decision-making is investigated in the light of different currency institutional priorities.

Humboldt Exchange Dollars allow direct participation for community members in making important decisions for the currency, while being tolerated as an institution by US RFs. Much of that tolerance comes from the Humboldt Exchange's status as a non-profit community sponsored institution. Thus, Fung's (2001) conceptualisation of participatory governance calling for small scale community level institutions cooperating with national level institutions supports Humboldt Exchange policy of trading in both US Dollars and Humboldt Exchange Dollars. Indeed, this policy may play a significant role in that official toleration.

Time Dollars by contrast, issued through small scale non-profit community Time Banks, receive tax exemption, and are possibly kept small scale by the SoV emphasis. Both community-based currencies show, despite the differing linkages with general purpose money and the differing levels

of national regulatory tolerance, that cooperation with national RFs (through direct linkages to the national currency or by limiting scale by function or geography) enhance viability. Local community economies are thus boosted, as Seyfang (1996) and others have found, while the dominance of the national currency is acknowledged.

Deli Dollars, no longer in circulation, may have been marginally tolerated by national RFs due to their business institutional issuance, despite their very small scale.

Analysis of these issues for each currency shows that external regulatory factors do seem to exert greater influence on internal governance than vice versa as Monbiot (2009) and others assert. Nevertheless, the tolerance shown to community-based currency institutions, Time Banks in particular, also shows that currency institutions can work to meet stakeholder priorities and national level concerns simultaneously. Thus, linkages national regulatory influence can contribute positively toward higher levels of SMG.

6.2 Relating Participatory Internal Decision-making to Scale and SMG

Internal governance is influenced by external RFs and by institutional scale. This section explores the interactions between PID of scale as they affect SMG. Figure 6.8 provides a preliminary summary to aid comparison.

Figure 6.8: Preliminary Comparison of Interaction between PID and Scale
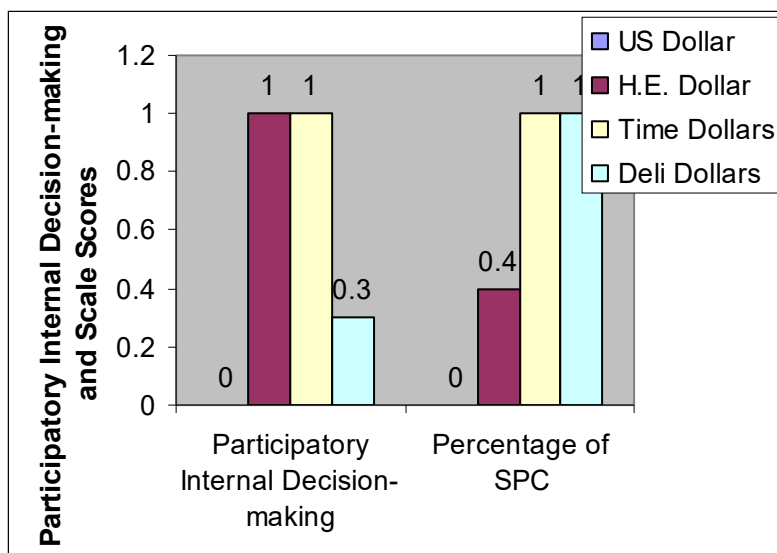
PID and Scale scores for each currency are added to give a maximum combined PID and scale interaction sum of 2. This sum allows an estimate of how much greater the influence on shared governance of one currency's internal processes and scale may be than another. Scores are discussed from governance and scale perspectives with the aid of the Quadrants in Table 6.7 below, as described previously, starting with the US Dollar.

Table 6.7: Quadrants for Participatory Internal Decision-making (PID), Scale

	Participatory Internal Decision-making (PID)	
Percentage SPC	D (0,1)	A (1,1)
	C (0,0)	B (0,0)

Quadrant A: Currencies with considerable to maximum PID, and small scale (higher percentage of SPC)
Quadrant B: Currencies with considerable PID but large scale (not SPC, or low percentage of SPC)
Quadrant C: Currencies minimal or no PID, and large scale (not SPC)
Quadrant D: Currencies with low PID, small scale (higher percentage of SPC)

As noted previously, these currencies are examined in the light of each of three sets of data: external RFs, internal stakeholder decision-making, and scale. This section focuses on interactions between internal governance and scale. Recall that PID operationalises governance principles of transparency and accountability through direct stakeholder participation in seigniorage, issuance and backing decisions. PID is strongly affected by practical issues involved in participatory decision-making. Furthermore, the number of functions a currency implements and the geographical area in which it circulates also affect governance. The juxtaposition of PID against scale within the context of overall institutional ability to facilitate stakeholder input is explored next, starting with the US Dollar.

6.2.1 PID vs. Scale for US Dollar

The US Dollar is both the national currency of the USA as well as a worldwide reserve currency and UoA for international accountancy, affecting people in many other countries. Those effects imply that SMG should apply globally to all US Dollar stakeholders. It should be noted that the internal governance of the US Dollar, the only national currency in the USA[14], is not typical of any currency in the world, and neither is its scale. While scale influences US Dollar internal governance in conjunction with many external factors, nevertheless, examining the internal governance and scale of the US Dollar facilitates understanding other currency institutional influences. First, a comparison of US Dollar internal processes and scale maps those two influences against each other, then lays the groundwork for understanding how these processes affect other currencies.

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[14] The case of Cuba, with its exchangeable national currency and second non-exchangeable national currency, would have been very interesting to study applying this methodology.

Table 6.8: US Dollar PID and Scale (% SPC) sum

Minimum Possible	PID	Scale	PID and Scale Sum	Maximum Possible
-1	0	0	0	2

The reader should be mindful that the US Dollar is not typical, even of other national currencies. Table 6.8 shows that the US Dollar has an almost complete lack of PID and is very large scale, falling entirely outside of the set of SPCs. The PID score of 0 and the SPC score of 0 together give the US Dollar a total PID and scale interaction sum of 0 out of a possible score of 2. This outcome is not surprising given the difficulty of full stakeholder access to such a large scale monetary institution.

Figure 6.9: US Dollar PID vs. Scale Quadrants
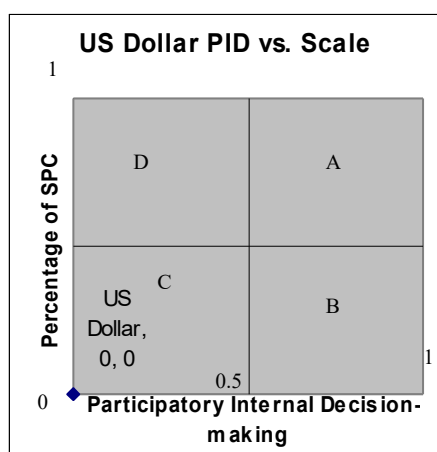
Figure 6.9 shows into which PID vs. Scale quadrants The US Dollar, and probably most world reserve currencies by extension, fit. Combining the two data points from the PID score and SPC percentage yields coordinate pair of (0,0). This falls in the extreme lower right hand corner, or Quadrant C, indicating no PID and very large scale. These findings support Fung's (2001) assertion that large scale institutions are less effective at sharing governance

6.2.2 PID vs. Scale for Community-Based Currencies: Humboldt Exchange and Time Banks

Community-based currencies are next analysed from the perspective of internal governance and scale interactions. First discussed are Humboldt Exchange Dollars which emphasise the MoE function, and then Time Banks, which emphasise the SoV function. PID levels are contrasted with currency scale to understand how these processes interact with each other and influence SMG.

Figure 6.10 shows that these community-based currency institutions differ from each other both in circulation and by emphasising different functions of money. Their SMG hinges on how functional and geographical differences affect their decision-making processes and RF treatment.

Figure 6.10: Humboldt Exchange Dollar and Time Dollar Participatory Internal Decision-making (PID) and Scale Quadrant Comparisons
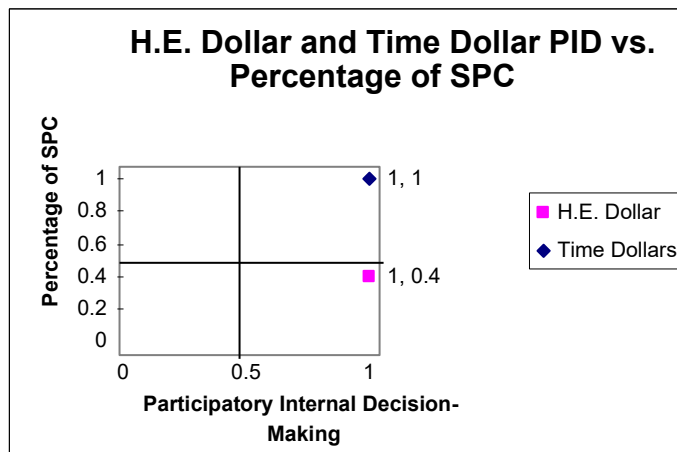
6.2.2.1 PID vs. Scale for Humboldt Exchange Dollars

To introduce comparisons of Humboldt Exchange Dollar PID and scale scores, recall that Humboldt Exchange Dollars are issued as a community MoE backed by the US Dollar. It is important to compare internal governance with scale in order to understand how these influences interact.

Table 6.9: Humboldt Exchange Dollar PID and Scale (% SPC) sum

Minimum Possible	PID	Scale	PID and Scale Sum	Maximum Possible
-1	1	0.4	1.4	2

The sum of the PID and scale scores is 1.4, from a possible maximum of 2 is fairly high, raising the possibility that PID and scale may be related. It is reasonable to expect that internal processes will require adjusting for functional emphasis and circulation range as the number of monetary tasks and stakeholders increase. Backing particularly affects functionality, which in turn affects seigniorage

and issuance. Humboldt Exchange internal processes attempt to allow as much local participation as possible while creating a viable currency which serves the Humboldt community.

Figure 6.11: Humboldt Exchange Dollar PID vs. Scale Quadrants
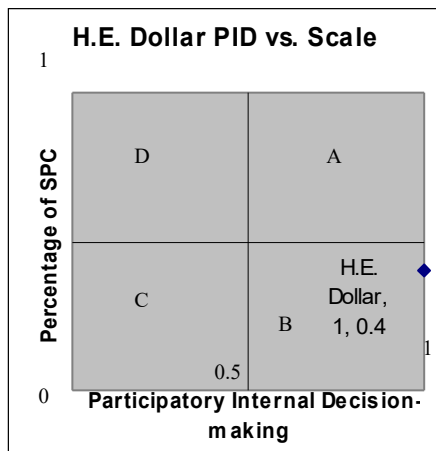
While small sample size limits conclusions that can be drawn with regard to how PID and scale influence one another, Figure 6.11 shows Humboldt Exchange Dollars in Quadrant B representing currencies with significant PID which are also on the **larger** end of the scale spectrum. Humboldt Exchange Dollars emphasise the MoE function, circulating only at the community level, although convertibility to the US Dollar increases Humboldt Exchange Dollars scale. This trade-off of functional linkage for greater viability as a MoE could affect PID in the long run if the functional or circulatory scale increases dramatically. However, these trade-offs do not currently appear to lower Humboldt Exchange Dollars PID.

While circulating physical currency in the local community allows greater flexibility for transactions than a credit based or time based currency, the trade-off may be an element of impersonality in the money, possibly reducing community control of the currency. Despite their linkage to general purpose money, Humboldt Exchange Dollars have a great deal of direct participatory input from the community. This demonstrates that even medium scale community currency circulation can retain high levels of PID. Next, analysis of Time Dollars explores the juxtaposition of PID and small scale for currencies that emphasise the SoV function.

6.2.2.2 PID vs. Scale for Time Banks

This section analyses the relationship between internal governance and scale for Time Dollars, using the sum of Time Bank scores for PID and scale as a percentage of SPC.

Table 6.10: Time Dollar PID and Scale (% SPC) sum

Minimum Possible	PID	Scale	PID and Scale Sum	Maximum Possible
-1	1	1	2	2

Time Dollars, which emphasise the SoV function, appear to suggest a close relationship between PID and small scale. The PID score of 1 and identical Fully SPC scale score of 1 gives a total PID and scale interaction sum of 2, which is the maximum sum for PID and degree of SPC, implying that Time Banks should have a high level of SMG. The small scale of Time Banks seems to allow more participatory input from stakeholders. Whether it is the emphasis on the SoV function of money or small geographical range that keeps Time Banks closely oriented to local communities, both of these factors are important influences on Time Dollars SMG.

Figure 6.12: Time Dollars PID vs. Scale Quadrants
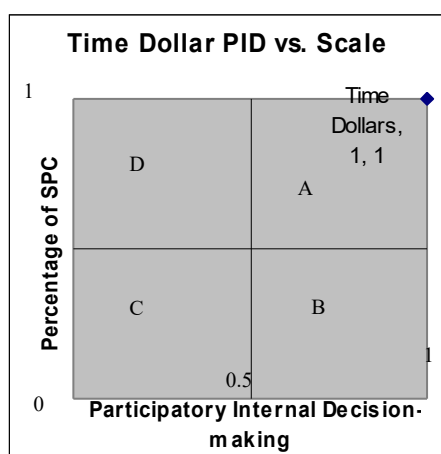
Figure 6.12 shows Time Dollars in Quadrant A, indicating the highest degrees of both PID and SPC. While comparison against other SoV emphasising currencies would fortify the findings presented here, there currently do not appear to be other similar SoV based currency institutions. Time Dollars emphasis on SoV combined with direct personal service to the community may both help and hinder growth of the currency. The lack of a circulating MoE may limit the circulatory flexibility of Time Dollars, but the high PID score appears to show that storing value as time and situating each Time Bank in a local community facilitates greater stakeholder access. Personal donation of time to the Time Bank may reduce pressure to exchange, distinguishing Time Dollars from other currencies which require exchange with other individuals rather than with the community as a whole. Such decision-making flexibility may only be possible with a currency which primarily stores value rather than issuing credit or circulating notes, since storing value may

allow communities to accept a wider range of services from excluded individuals. The egalitarian nature of time storage may offer greater levels of stakeholder empowerment than credit or exchange based currencies are able to allow. The decision to emphasise future value may inhibit growth, and therefore PID can affect scale more heavily based upon community priorities.

To conclude the community-based currencies PID and scale comparison section, emphasis on different functions affects PID and scale. PID appears to have a stronger influence than scale. The large variation in PID and SPC score sums of 1.4 for Humboldt Exchange Dollars versus 2 for Time Dollars indicate that community sponsored currencies are not all alike. This variation also implies that larger scale may not necessarily hinder sharing of governance. Given the requirement for full transparency and accountability which underlies PID, participatory governance seems more effective in a smaller scale institution. A higher combined total sum of PID and SPC implies a higher SMG level for Time Dollars.

6.2.3 PID vs. Scale for Privately Issued Loyalty Currency: Deli Dollars

Although a community supported currency, Deli Dollars were business sponsored, so it seems remarkable to have had a loyalty currency taken up by a local community. While loyalty currencies can be expected to have lower PID than community sponsored currencies, the small scale of this loyalty currency may have been one factor in the enthusiasm the local community had for this currency which led to its successful community uptake.

Table 6.11: Deli Dollar PID and Scale (% SPC) sum

Minimum Possible	PID	Scale	PID and Scale Sum	Maximum Possible
-1	0.3	1	1.3	2

Internal decision-making and scale seemed to have little relationship to one another in the unique case of Deli Dollars. Despite the community support for this loyalty currency and its very small scale, there seems to be no clear correspondence between the Deli Dollar's low PID level and its status as a full SPC. The score of .3 for PID was due to the priority conflict business sponsored currency institutions experience in sharing revenues and decision-making with customers. Yet the Deli Dollar's score of 1 for SPC means that it is nearly as small scale as a currency can be. Deli Dollar combined PID and scale sum of 1.3 out of a total maximum of 2 for combined PID and scale interaction indicates that not all SPC institutions have a high PID level. Nevertheless, despite the

Deli Dollar's business institutional sponsorship, the fact that it was embraced by the local community suggests that it met some stakeholder need in the community.

Figure 6.13: Deli Dollar PID vs. Scale Quadrants
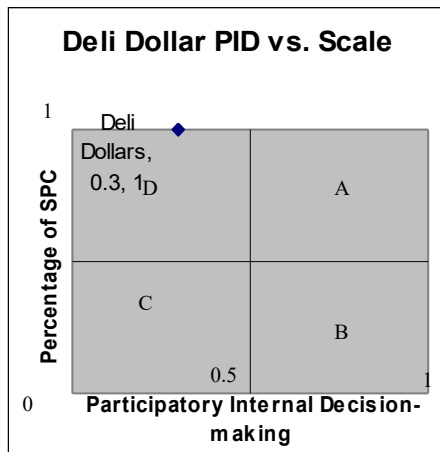
Deli Dollars were one of very few for-profit institutionally sponsored currencies which have been accepted by a local community. Figure 6.13 shows Deli Dollars in Quadrant D, indicating low PID, yet also a very small scale. Clearly business institutions face pressure to maximise profits. This implies that given a choice between low shared input in a large scale currency and low shared input in a local currency, community members chose a local currency, even without the benefit of fully participatory decision-making. While any SPC can act as a symbol of local area pride, institutional sponsorship appears to determine the level of PID. Therefore small scale does not automatically bring fully shared input into decision-making processes.

6.2.4 Effects of Participatory Internal Decision-making versus Scale on SMG in USA

The final section of this chapter summarises findings on PID as it interacts with functional and geographical currency scale. Analysis of interaction sums for all currencies are compared as are PID vs. Scale quadrant plots to form conclusions regarding the influences of internal processes and scale upon SMG. At this point a summary comparing PID levels against scale for all currencies

may facilitate understanding these interactions. Table 6.12 shows the combined Participatory Internal Decision-making score, Percentage of SPC score and the total of those scores for each currency.

Table 6.12: Sums of PID and Scale Interaction Sums

	US Dollar	H. E. Dollar	Time Dollar	Deli Dollar
Participatory Internal Decision-making	0	1	1	0.3
Percentage of SPC	0	0.4	1	1
PID / Scale interaction sum	0	1.4	2	1.3

Table 6.12 shows the US Dollar to be both highly centralised in decision-making and very large in scale by comparison with other currencies. It is interesting to note the inverse relationship between PID and scale in this case. The low PID score of 0 and the large scale score of 0 give the US Dollar a total PID and Scale interaction score of 0 out of a possible score of 2.

Humboldt Exchange Dollars on the other hand, seem to decouple high PID from small scale. The sum of the PID and scale interaction scores is 1.4, from a possible maximum of 2. While not as clearly matched as the US Dollar PID and SPC scores, the reasonably high sum of 1.4 implies that community-based institutional sponsorship may have increased the SMG potential of Humboldt Exchange Dollars.

By contrast, Time Dollars relate PID to scale, but in the opposing direction to the US Dollar. The combined PID score of 1 and SPC score of 1 gives Time Dollars a total PID and scale sum of 2, which is the maximum combined score for PID and scale, implying that Time Banks may have very high potential SMG. The lack of correspondence between PID and scale for other currencies reviewed and the fact that the US Dollar is not typical of other currencies makes this trend difficult to confirm without more data.

Deli Dollar's Fully SPC score of 1 and low PID score of 0.3 again seems to decouple correspondence between PID and scale. Paradoxically, although priority setting may be less flexible for a loyalty currency given the business-based institutional context, community acceptance of Deli Dollars was significant.

While there are no clear trends within the PID and scale interaction overall, there does appear to be a trend combining small scale and high PID for the two community sponsored currencies.

Community-based currencies therefore may potentially facilitate greater access to currency decision-making than private or national currencies despite the smaller scale of privately issued currencies such as Deli Dollars.

Figure 6.14: PID vs. Scale Interaction Quadrants for All Currencies
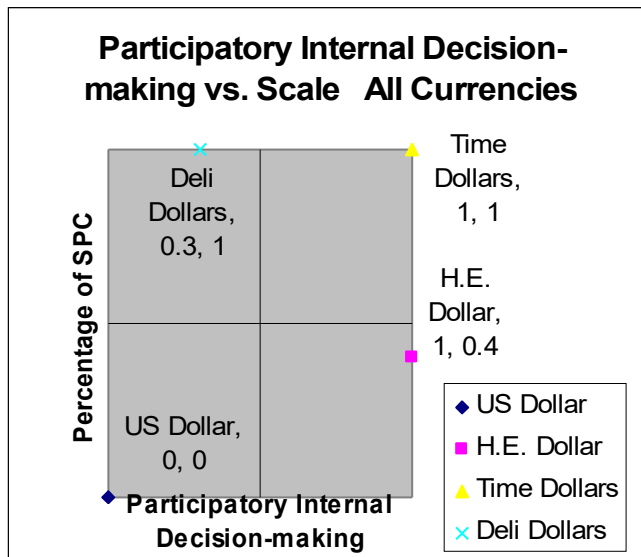
Figure 6.14 shows US Dollars falling into Quadrant C, indicating very low PID and very large scale (recall Table 6.7). Humboldt Exchange Dollars, meanwhile, emphasise the MoE function, appear in Quadrant B, have a large degree of PID and are also on the larger end of the scale spectrum. Time Dollars by contrast fall into Quadrant A, indicating the highest degree of PID and small scale as a SPC. Time Dollars emphasis on the SoV function of money may facilitate both high PID and small scale. Finally, Deli Dollars in Quadrant D, despite their small scale, showed little shared stakeholder decision-making. Paradoxically, despite being fully SPC and community supported, it did not have a high PID level. The choice to use a loyalty currency could in itself be viewed as a form of shared community decision-making, suggesting that smaller scale allows greater direct stakeholder participation. Nevertheless Deli Dollars did not share decision-making as effectively as the community sponsored currencies, which appear to have higher potential SMG based on their combined institutional governance and scale.

It is now useful to bring together the implications of this section for SMG, focusing on how internal decision-making processes and scale affect one another. Interaction between internal processes and scale does appear to affect the potential SMG of even the largest currency institution. In general, scale does not appear to correspond directly with PID. When combined however, there does seem to be a trend toward community-based currencies showing higher general levels of PID.

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The US Dollar presents an intriguing question of the impact of scale on internal governance. While the lack of shared seigniorage with dollarised nations underlines the low PID of the US Dollar, geographical circulation clearly influences the internal governance of even this very large scale currency.

If the case of Humboldt Exchange Dollars is representative for community-based currencies which emphasise the MoE function, then PID appears to place only minimal limitations on the scale of a currency. Interaction between PID and scale for Humboldt Exchange Dollars is more complex due to tensions between community empowerment and the need to avoid competition with the US national currency. Here internal processes intervene to control the scale of the currency, imposing limits to Humboldt Exchange Dollar circulation by recommending equal use of the national currency in transactions. While this compromise retains stakeholder input, it also represents some loss of choice since the national currency limits circulation of the community-based currency.

Time Dollars on the other hand avoids circulation competition by emphasising a different function of money. Although the US Dollar does function as a SoV, Time Banks allow members to store time directly, negating the effects of inflation suffered by MoE currencies, including the US Dollar. The stakeholder decision to store value as time rather than within a circulating local MoE however may limit the scale of Time Dollars.

Deli Dollars shows that small scale does not necessarily bring with it high levels of PID. While this loyalty currency's small scale did not result in high PID, the community sponsored currencies Humboldt Exchange Dollar and Time Dollars show that PID does not prevent scale from growing, at least to a medium level.

Conclusions based on these analyses are that smaller scale currencies, even when not sponsored by a community-based parent institution, can allow greater levels of stakeholder monetary decision-making. The analysis also finds that it is possible to share monetary governance decisions within medium scale institutions, and that there does not appear to be a direct correspondence between PID and currency scale, although it does appear that small scale currencies tend to allow more shared internal decision-making than very large scale currencies. This implies that both internal processes and currency scale must be taken together to understand their impact on SMG. The final set of interactions is between national RFs and scale.

6.3 Relating Scale to Toleration by National (External) Regulatory Frameworks (RFs) and Shared Monetary Governance

Scale interacts with governance in complex ways. To reiterate previous definitions, external governance in this project is defined as international, State, grant funders, venture capital underwriters, business and chamber of commerce processes and policies, and any other regulatory influences which are external to the currency institution. Internal governance comprises the internal processes of the currency institution itself. For reasons of scope, only national level governance frameworks are examined here in the role of external governance. A comparison of trends for all currencies is used to investigate the interactions between scale and national RFs, summarised below in Figure 6.15.

Figure 6.15: Preliminary Comparison of Scale and External (National) RF Tolerance
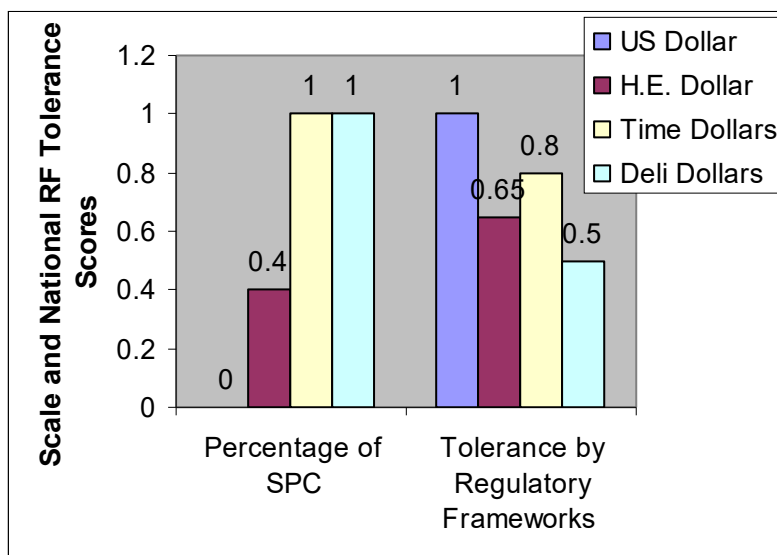
A comparison of trends is explored for all currencies, and limitations of the analysis will be examined, adding scores for each currency together to create a sum showing combined scale and national RF interaction. Scores are discussed from a scale and national regulatory perspective with

the aid of Quadrants described in Table 6.13 below. The section examines all four currencies beginning with the US Dollar.

Table 6.13: Tolerance by Scale vs. Regulatory Frameworks (RFs) Quadrants

	Percentage SPC	
RF Tolerance	D (0,1)	A (1,1)
	C (0,0)	B (0,0)

Quadrant A: Currencies BOTH high percentage SPC (small scale) AND well RF tolerated
Quadrant B: Currencies with high percentage SPC (small scale) BUT low toleration from RFs
Quadrant C: Currencies with BOTH low SPC percentage (large scale), AND minimal or no RF toleration
Quadrant D: Currencies with low SPC percentage (large scale) BUT well tolerated by RFs

The complex interactions between RF response to currency institutions and scale made it necessary to limit the scope of this inquiry to manageable factors. The most prominent influential factor based on frequent mention in the literature is circulatory scale and national regulatory responses to that scale. Therefore these factors are explored for each currency beginning with the national currency, which is the US Dollar.

6.3.1 Scale vs. National RF Tolerance for the US Dollar

The US Dollar is again used as the representative national currency for this study of currencies in the USA. Naturally, as a national currency it is well tolerated by national RFs, though it is in fact international in scale. A comparison of US Dollar scale against national RF influence follows.

External factors affecting internal governance of the US Dollar, run by the Federal Reserve (The Fed) and the US Treasury Department include US national and state regulations and international monetary concerns, such as debt, dollarisation and speculation. Each of these factors influences the scale of the US Dollar while the Dollar's scale reciprocally affects those factors. External factor investigation in this work is limited to US national RFs as covered in Solomon's (1996) thorough study which remains the most up to date and cited work on US monetary legal frameworks.

Table 6.14: US Dollar Scale (% SPC) and RF Tolerance sum

Minimum Possible	RF Tolerance	Scale	RF and Scale Sum	Maximum Possible
0	1	0	1	2

Table 6.14 shows the US Dollar to be very large scale and fully tolerated by national RFs. The combined scale and RF Tolerance interaction sum for the US Dollar totals only 1, implying that the very large scale of the US Dollar may inhibit national regulatory attempts to set priorities based on domestic needs. Indeed, even among national currencies, Banchs (2008) finds US Dollar governance to be atypical due to its status as a major reserve currency. The large number of factors complicates the influence scale and national monetary regulations exercise over each other due to the fact that the Fed must also consider international effects when deciding how to govern the US Dollar. Although such factors play less of a role in shaping SMG for smaller scale currencies, it is beneficial to understand at least in part how these factors affect larger scale currencies.

Figure 6.16: US Dollar Scale vs. National RF Tolerance Quadrants
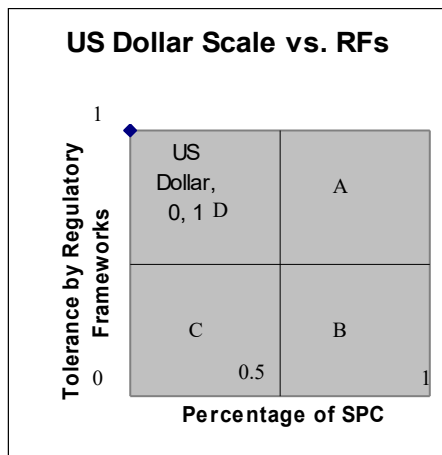
Figure 6.16 above compares scale with national RF tolerance for the US Dollar, appearing in Quadrant D (recall Table 6.13). Pressure on the US Dollar to meet both domestic needs and international needs result from its very large scale, presenting regulators with conflicting priorities. How small scale influences currency institutional governance vis-à-vis national RF treatment is explored through smaller scale currencies next.

6.3.2 Scale vs. National RF Tolerance for Community Sponsored Currencies: Humboldt Exchange Dollars and Time Dollars

Community-based currencies tend to have functionally and geographically limited scale, usually making such currencies special purpose rather than general purpose money. Many communities choose to explicitly separate the functions of money, as Gesell (1906) advocated with separating the MoE function from the SoV function to increase speed of circulation. The effects of such scale changes to a currency upon national RFs tolerance toward that currency appear to be favourable if it does not compete with the national currency, or less favourable if a community appears to reject use of the national currency. While Douthwaite (1996) and others point to the government banning of stamp scrip in 1933 as evidence of national RF antagonism toward community-based currencies, data presented here shows this no longer to be the case. Humboldt Exchange Dollars scale vs. RF comparisons show the relationship between scale and national RFs for a community-based MoE, while Time Dollars comparisons show that relationship for a SoV currency. Humboldt Exchange Dollars, which most emulate the US Dollar, are presented first.

Figure 6.17: Humboldt Exchange Dollar and Time Dollar Scale vs. National RF Comparisons
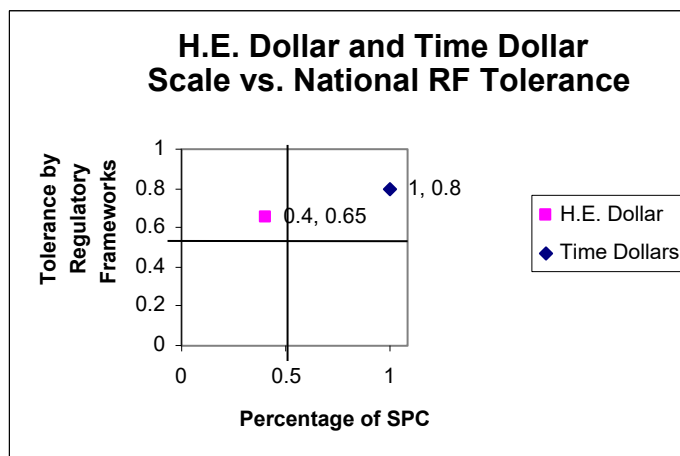
6.3.2.1 Scale vs. National RF Tolerance for Humboldt Exchange Dollars

Comparing the impact of scale on national RFs and vice versa in the case of Humboldt Exchange Dollars is complex due to intermingled factors influencing these interactions. First, the scale and RF toleration scores for Humboldt Exchange Dollars are compared, and then the limitations of those comparisons will be discussed in light of the impact those interactions may have on SMG for Humboldt Exchange Dollars.

Table 6.15: Humboldt Exchange Dollar Scale (% SPC) and RF Tolerance Sum

Minimum Possible	RF	Scale	RF and Scale Sum	Maximum Possible

0	0.65	0.40	1.05	2

Table 6.15 shows a smaller gap between the scale and RF Tolerance sum for Humboldt Exchange Dollars than for the previously examined US Dollar. While relatively closely linked to the national currency at only %40 SPC, the RF Toleration score of .65 is surprisingly only just above marginal. Added together, the scale and RF score give a sum of 1.05, from a possible maximum score of 2. That combined total implies a relatively low SMG potential from the perspective of how Humboldt Exchange Dollar scale influences national RFs which surround it. Thus, small scale institutions may be allow greater stakeholder input, yet when scale interfaces with external RFs, stakeholder priorities may be overridden by national regulations.

Figure 6.18: Humboldt Exchange Dollar Scale vs. National RF Tolerance Quadrants
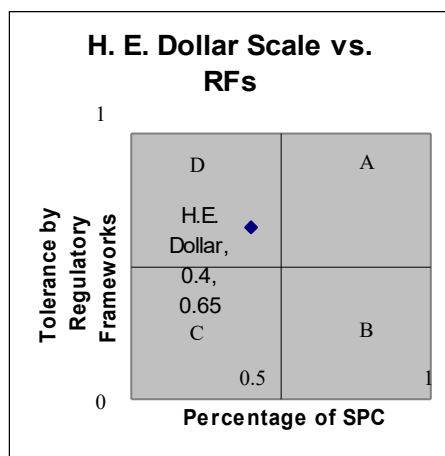
Figure 6.18 shows that small scale currencies are heavily influenced by US national RFs. Humboldt Exchange Dollars fall into Quadrant D, indicating medium to large scale and medium to high tolerance by national RFs (see again Table 6.13). The linkage between larger scale general purpose money and RF tolerance for Humboldt Exchange Dollars may allow more large scale monetary institutional influence. This toleration, based on the Humboldt Exchange Dollar's linkage with the US Dollar, increases Humboldt Exchange Dollars scale, while allowing increased stakeholder input into the local monetary institutional decision-making. Non-MoE community-based currencies are explored next through Time Banks.

6.3.2.2 Scale vs. National RF Tolerance for Time Dollars

While Humboldt Exchange Dollars are community sponsored and emphasise the MoE function, Time Dollars place most emphasis on the SoV function of money. It is therefore important to understand how functions affect currency scale, and how scale in turn affects the relationship of such community-based currency institutions to national RFs. The functional limitation of SPCs (which Humboldt Exchange Dollars are **not**) may allow greater focus on stakeholder priorities. This is because small scale currency institutions which are well tolerated may have greater potential to empower users through direct community institutional governance.

Table 6.16: Time Dollar Scale (% SPC) and RF Tolerance Sum

Minimum Possible	RF	Scale	RF and Scale Sum	Maximum Possible
0	0.8	1	1.8	2

Time Dollars scale is determined by the scale of each individual Time Bank which issues Time Dollars. There again appears to be a closely related interval between the scale and the Toleration by national RFs for the Time Dollar SoV emphasising currency. The scale score of 1 indicates a full SPC, while the RF Toleration score of 0.8 indicates a quite well but not fully tolerated currency. The combined total score for SPC percentage and Toleration by national RFs is the sum total of 1.8 out of a possible maximum total of 2. This high Scale to National RF sum implies a high potential level of SMG.

Figure 6.19: Time Dollar Scale vs. National RF Tolerance Quadrants
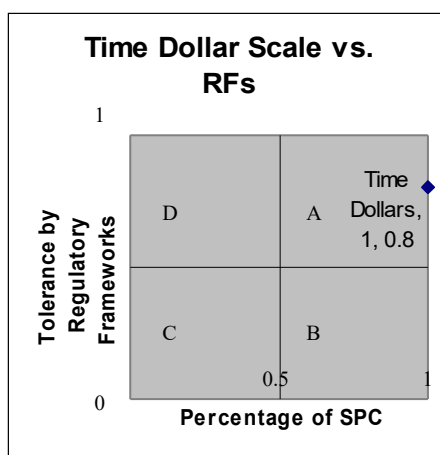
Figure 6.19 shows Time Banks close connection between scale and national RF tolerance in Quadrant A, which could encourage greater issuance of Time Dollars. Indeed, the relationship between small currency institutional scale and high RF Toleration implies that RFs in the USA may raise SMG levels of small scale currency institutions partly because Time Dollars do not compete

functionally with the national currency. Small scale SoV currency institutions may complement the national level MoE, offering stakeholders greater transaction flexibility. Because these two functions are held in separate currencies, they may encourage greater levels of shared decision-making without the tension of a competing currency as in the case of a MoE like Humboldt Exchange Dollars.

While individual Time Banks vary, the general scale and regulatory stance toward the Time Dollars they issue is similar due to the standardised guidelines for starting up Time Banks and the care taken to ensure compliance with Coulter's (1996) tax ruling. This care, like Humboldt Exchange Dollar institutional efforts to cooperate with the US Dollar, allows Time Dollars to generally escape the notice of federal regulators. This care combined with the very small scale of each Time Bank seems to allow a significant level of autonomy and ability to keep value stored at the local community level, implying that stakeholders may exercise greater levels of direct participation in local monetary decision-making. Furthermore, it seems likely that the greater levels of confidence inspired by high tolerance from national RFs increases participation in Time Banks.

US national RFs appear to incentivise community-based currencies **if** they functionally complement the US Dollar. Adding the scale and RF Toleration score yields combined scale and RF interaction sums of 1.05 for Humboldt Exchange Dollars contrasted with 1.8 for Time Dollars, giving Time Dollars higher potential SMG based on interaction between scale and national RFs. Figures 6.18 and 6.19 show Humboldt Exchange Dollars in Quadrant D, and Time Dollars in Quadrant A respectively. Humboldt Exchange Dollars, which are more functionally similar to the US Dollar than to Time Dollars, appear to be somewhat limited by their linkage to general purpose money, with a potentially lower SMG than Time Dollars. Yet Humboldt Exchange Dollars, as a MoE, may provide more functional flexibility than Time Dollars. Whether loyalty currencies can achieve similar flexibility with RF toleration is explored next through Deli Dollars.

6.3.3 Scale vs. National RF Tolerance for Privately Issued Loyalty Currency: Deli Dollars

Finally, how tolerance by national RFs toward currencies may affect scale and vice versa is now reviewed for the community accepted loyalty currency, Deli Dollars, not to be confused with the loyalty programs by the name of Deli Dollars which currently exist in several places in the USA. This locally accepted loyalty currency was sponsored by Frank's Deli, no longer in business, in Great Barrington, MA and circulated throughout the local community. It was the only freely circulating well known loyalty currency to be taken up enthusiastically by a community to date, and is still often referred to in complementary currency discussions. For this reason it is important to understand how its scale may have interacted with tolerance for the Deli Dollar by US national RFs.

Table 6.17: Deli Dollar Scale (% SPC) and RF Tolerance Sum

Minimum Possible	RF	Scale	RF and Scale Sum	Maximum Possible
0	0.5	1	1.5	2

Despite full SPC status, Table 6.17 shows that Deli Dollars were only marginally tolerated by US national RFs. Nonetheless, the score of 1 for scale and .5 for RF toleration give the Deli Dollar a Scale and RF interaction sum of 1.5 out of a possible maximum score of 2, implying a relatively high potential SMG level. This is somewhat paradoxical since the currency was sponsored by a business rather than by a non-profit institution. The high level of community acceptance implies that there was significant perceived value to the community for this loyalty currency, possibly beyond the role of keeping the popular local Deli in business. Its limited functional and geographical scale may not have gained Deli Dollars strong regulatory support, partly due to for-profit issuance.

Figure 6.20: Deli Dollars Scale vs. National RF Tolerance Quadrants
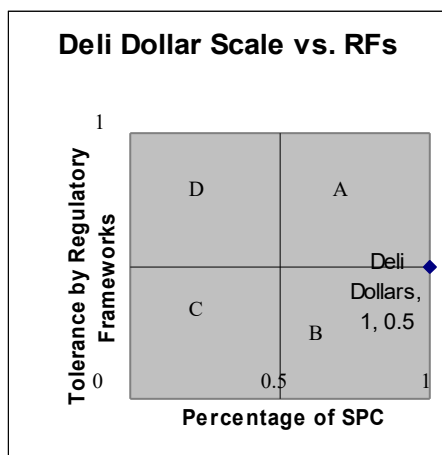
Figure 6.20 shows Deli Dollars between Quadrants A and B, indicating a very small scale but marginally tolerated currency. Deli Dollars were thus, referring back to Table 6.13, an example of a very small scale currency sponsored by a market based institution, yet were only marginally tolerated by US national RFs. This shows that it is not scale nor even connection to market based institutions which grant toleration from the US regulatory system. While there are limitations to this data due to the small sample size, this loyalty currency was one of exceptionally few to have been accepted as a community currency. That small scale apparently did allow a degree of community control of the local economy through the Deli Dollar until its withdrawal. Yet pressure to make a profit for the deli could have limited user decision-making in internal processes. As Ardron (2006) contends, however, such a currency can still function as a means of increased community participation in currency decision-making.

6.3.4 Conclusions on Scale, National Regulatory Frameworks and SMG

This section analysed scale and national RF interaction as they influence SMG. First, a summary of the previous comparisons of scale against national RF tolerance for all currencies discusses total sums and Quadrants into which they fell. These are then brought together in a broader analysis. To summarise comparisons for Scale with RF Toleration, sums for each currency indicate their interaction as shown in Table 6.18.

Table 6.18: Sums of Scale and RF Interaction Scores

	US Dollar	H. E. Dollar	Time Dollar	Deli Dollar
Percentage of SPC	0	0.4	1	1
Toleration by RFs	1	.65	.8	.5
Scale / RF Interaction Total Sum	1	1.05	1.8	1.5

The US Dollar's SPC percentage score of 0 initially appears inversely related to the RF Tolerance score of 1, its combined scale and RF tolerance interaction sum being the lowest for any currency. Humboldt Exchange Dollar scores also appear closely coupled although toward the centre rather than extremes, with scale at .4 and RF Tolerance at 0.65 totalling 1.05, from a possible maximum score of 2. Time Dollars scale and RF Toleration sum by contrast is 1.8, the highest scale to national RF interaction sum, implies a high potential level of SMG. While the scale and RF Toleration sum for Time Dollars is the closest for any currency, possibly be due to its emphasis on SoV, overall there appears to be no correlation between scale and RF Tolerance. Deli Dollar's high

sum of 1.5 again illustrates this lack of correlation as a full SPC despite marginal toleration from national RFs.

These sums for all of the currencies appear to show a trend of less toleration for local MoEs and greater toleration by RFs for SoV based currencies, which do not compete with the US Dollar for circulation. Scale does not appear to be affected by lack of toleration and RFs do not appear to grant more tolerance to smaller scale currencies, as the cases of Humboldt Exchange Dollars and Deli Dollars demonstrate, with their differing scales, yet similar toleration by RFs. While the scale of non-national currencies appears to be held down by the need to avoid competition with the US Dollar, national RFs seem only marginally affected by currency scale. Nevertheless, currency institutional scale determines the level of stakeholder participation in decision-making, therefore it seems important that national RFs should be sensitive to this concern since national RFs wield significant influence on currency institutional SMG.

Figure 6.21: Scale vs. RF Tolerance Quadrants for All Currencies
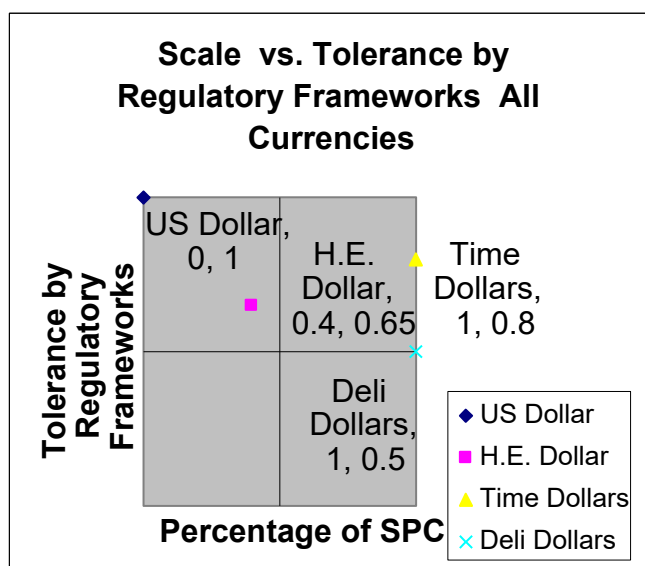
Figure 6.21 shows the US Dollar in Quadrant D near Humboldt Exchange Dollars which also falls in Quadrant D, indicating medium to large institutional scale and medium to high tolerance by national RFs. Time Dollars by contrast fall into Quadrant A as a well-tolerated SPC, alongside the Deli Dollar which paradoxically fell between Quadrants A and B, indicating a very small scale but only marginally tolerated currency. As with the sums, the scattering of Quadrants indicates the complexity of interacting factors determining SMG. Small geographical circulation alone is not enough to ensure good toleration from national RFs, but partnership through either complementing

functions or linking of circulation with the national currency is necessary to obtain good RF tolerance. This shows that national RFs can limit potential levels of SMG, particularly for circulating exchange currencies, by requiring compromises which may decrease the level of stakeholder participation in currency institutional decision-making.

At this point it is useful to bring together implications from this analysis. Overall, it appears that national RFs exercise a greater level of influence over scale in the case of most currencies than scale can exert over those national level institutions. The one exception is the US Dollar, which has an enormous scale covering the domestic USA as well as much of the world. This special status appears to gives the scale of the US Dollar a somewhat heavier, yet not decisive, influence on Congressional decisions as they oversee the US Dollar than does the scale of small currencies over those same RFs. Despite its atypically large scale, the US Dollar has shared traits in common with other currencies studied here.

The three remaining currencies are medium to very small in scale, which may explain why they have been able to exert little influence over national RF responses. For these currencies it appears that national RFs have far more influence than vice versa. Partially, as in the case of Humboldt Exchange Dollars, this is exercised by directly inhibiting the circulatory scale of the currency, as with reporting requirements for extra-state circulating notes, and indirectly by requiring convertibility to the US Dollar. Deli Dollars notes in contrast were not convertible to US Dollars hence this currency's minimal RF toleration shows that cooperation with the national currency is essential. Time Dollars lack circulating media altogether, which may inhibit their scale, yet this lack also ensures that the currency fully complements the US Dollar. On the one hand, primarily SoV currencies may be more difficult to regulate, reducing influence from outside such currency institutions, but on the other hand, minimal attention from national RFs could conceivably inhibit currency viability, which is a potential drawback as a vehicle for stakeholder empowerment.

In summary, small to medium scale currencies may facilitate greater stakeholder empowerment but are also heavily affected by national RFs, requiring compromise between community needs and national level priorities. The optimal level of SMG calls for both small scale and careful consideration of national RFs. In this vein, Time Dollars compromise of complementing national currency functionality with a function applied locally could facilitate the greatest level of currency SMG. The upcoming section will examine SMG scores for each currency combining all three

factors of national RFs, Participatory Internal Decision-making at the institutional level, and scale to show how all three of these factors come together to shape SMG.

6.4 Comparisons with All SMG Factors

Previous analyses took only two of the three components of SMG (RFs, internal, scale) into consideration at one time. First explored were national RFs as they influence internal processes and institutional adaptation to RFs. Then scale and Participatory Internal Decision-making (PID) were compared across currencies, showing that these two factors tend to have the same effective weight, leading internal processes to evolve to compensate for scale. Finally, examining RFs against scale showed that national level RFs tend to outweigh scale in small to medium scale currency institutions, while at larger levels scale can have a significant impact on governance decisions. This section considers more complex combinations, examining results for all three governance factors together: tolerance by RFs, PID, and scale where previous chapters have taken factors into account only as one affected another. First, three way comparisons of the various sums of SMG by previously reviewed pairs are explored to see how the paired factors work all together. Then, Quadrant plots will be used to examine the full extent of relationships previously only explored in two dimensions. Finally, overall comparisons of all the trends will be completed via sums to determine which combinations achieve highest SMG scores.

Table 6.19: Three Way Sums

	US Dollar	H.E. Dollars	Time Dollars	Deli Dollars
Tolerance by RFs	1	0.65	0.8	0.5
Participatory Internal Decision-making	0	1	1	0.3
Percentage of SPC	0	0.4	1	1
SMG	1	2.05	2.8	1.8

Toleration of a currency by national RFs will determine the legal viability of that currency. National RF toleration however may also come at the price of reduced local control over the currency. National RF Tolerance sums for non-national currencies, as shown in Table 6.19 and Figure 6.22, tend to be highest when PID is higher, while scale appears not to be a decisive factor. PID sums on the other hand, seem highest when RF Tolerance is high, with scale again appearing not to be a decisive factor.

Figure 6.22: All PID vs. National RF Tolerance Quadrants
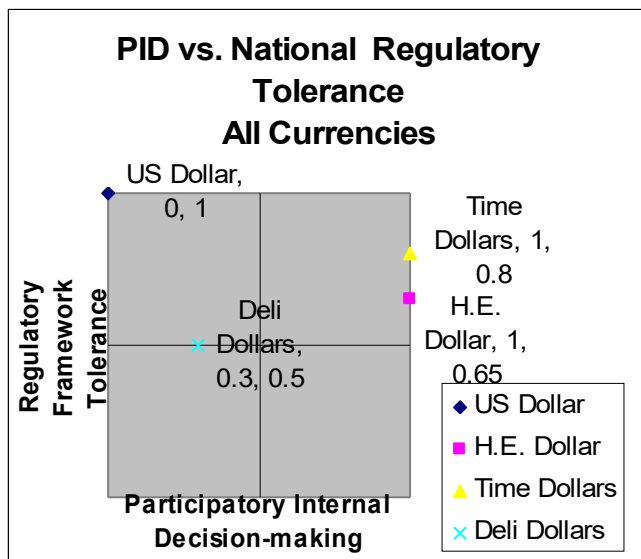
Smaller scale currency institutions, due to their greater vulnerability to currency user action, are scored higher than large scale money, which allows currency users less direct effective control. Scale appears to vary based on currency backing, since the two largest scale currencies (The US Dollar and Humboldt Exchange Dollars) are fiat currencies, while the SPCs were backed by time or by commodities. Conditions under which currencies can maintain SPC status remains unclear, since the relationships between scale, RF Tolerance and PID is variable. Overall, Figure 6.22 implies that high tolerance by RFs combined with high PID allows the highest degree of SMG regardless of scale. National RFs, PID and scale sums imply that governance, both external and internal to currency institutions, wields the greatest influence over SMG. Figure 6.23 below appears to confirm this finding, since both Time Dollars Humboldt Exchange Dollars share the high PID quadrants, despite their rather different RF Toleration levels. Further, Figure 6.24 illustrates how even the very smallest of scale does not gain greater RF favour. Hence it is external and internal governance, rather than function or geographical range, which appears to drive the ability of a currency to empower stakeholders.

Figure 6.23: All PID vs. Scale Quadrants

Participatory Internal Decision-making vs. Scale   All Currencies

Deli Dollars, 0.3, 1

Time Dollars, 1, 1

H.E. Dollar, 1, 0.4

US Dollar, 0, 0

Percentage of SPC

Participatory Internal Decision-making

- ◆ US Dollar
- ■ H.E. Dollar
- ▲ Time Dollars
- ✕ Deli Dollars
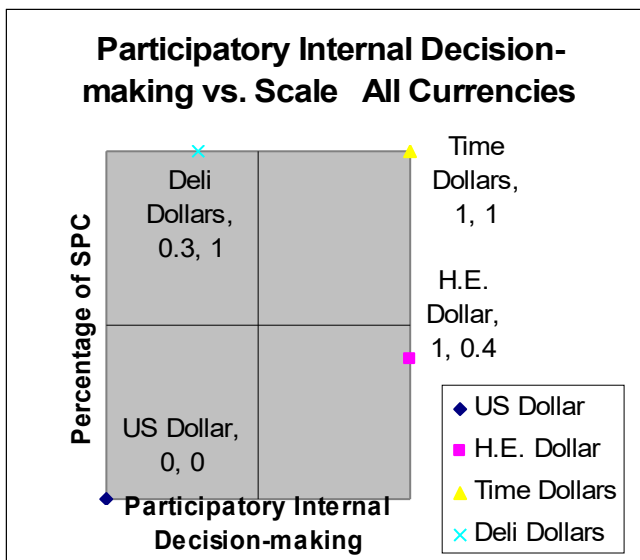
Figure 6.24: All Scale vs. RF Tolerance Quadrants

Scale vs. Tolerance by Regulatory Frameworks All Currencies

US Dollar, 0, 1

H.E. Dollar, 0.4, 0.65

Time Dollars, 1, .8

Deli Dollars, 1, 0.5

Tolerance by Regulatory Frameworks

Percentage of SPC

- ◆ US Dollar
- ■ H.E. Dollar
- ▲ Time Dollars
- ✕ Deli Dollars
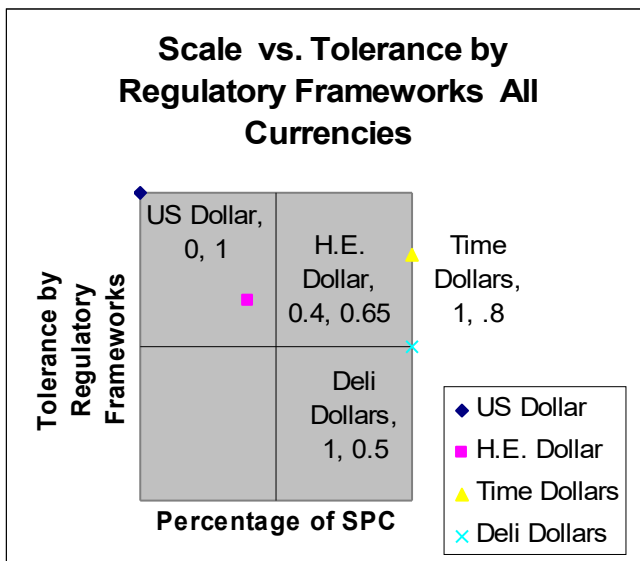
Previous Quadrants show all three governance factors as they come together by currency. Quadrant A in Figures 6.22, 6.23, and 6.24, shows the highest level of SMG. Quadrant C by contrast shows the lowest SMG. Most currencies tend to move from one Quadrant when analysing two factors, to a different quadrant when looking at different factors. This implies that the overall level of SMG can be affected significantly by combinations of different factors. The only currency which is consistently in the same quadrant is Time Dollars, which is also the only currency always in

Quadrant A. Humboldt Exchange Dollars moves between Quadrant A, in Figure 6.22, Quadrant B in Figure 6.23, and Quadrant D in Figure 6.24. When analysed by the factors of PID and RF tolerance, Humboldt Exchange Dollars fall in Quadrant A, while from the perspective of PID and scale they fall in Quadrant B. Viewed from the perspective of scale and RF tolerance Humboldt Exchange Dollars fall in Quadrant D. Deli Dollars also moves dramatically, between Quadrants A and B in Figure 6.24, Quadrants C and D in Figure 6.22, and Quadrant D in Figure 6.23. The US Dollar by contrast moves between Quadrants C in Figure 6.23, the lowest SMG scoring quadrant, and Quadrant D, a mid-range quadrant, in both remaining figures.

The movement of these currencies shows that different factors influence currency institutional governance input sharply. The fact that the only stable currency, Time Dollars, is one which emphasises a relatively unique function indicates that complementary function and small scale sacrifices the flexibility of a MoE, but allows greater stakeholder choice.

Bringing previous analyses together, it can now be determined when the highest level of SMG occurs. To understand those comparisons, each currency in relation to the function of money and type of institution sponsoring the currency must be taken in to consideration. For example, Time Dollars emphasise the SoV function of money. It appears that this choice of monetary function, in conjunction with the decisive role of high tolerance by RFs, allows Time Dollars greater SMG. One of the key implications of this is that non-profit sponsorship and PID are most important in conjunction with external RFs. The significance of these differences is that putting a greater emphasis on one set of interactions can lead to different results, as shown with the case of Humboldt Exchange Dollars and Time Dollars in Figures 6.22 and 6.23, which are both community sponsored, but have different levels of linkage to the national currency. This influences SMG heavily for these currencies. The highest degree of SMG results from the combinations of high RF tolerance and high PID. Therefore optimal combinations of RF Tolerance, PID and scale will involve community sponsored currency institutions like Time Banks, which are able to avoid competing with the functions filled by the US Dollar, yielding highest SMG, but without the flexibility of printed notes[15].

The main conclusion drawn here from these three way comparisons of SMG factors is that community-based currencies, since they are well-tolerated by national RFs and have high levels of

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[15] Interestingly, Antonio Gramsci´s thoughts on hegemony and alliances, though well beyond the scope of this thesis, seem to be corroborated by these findings, since CCs which ally themselves with the dominant national currency are indeed more successful, and simultaneously help to support the dominance of the national currency.

PID allow the highest degrees of SMG. Figure 6.24 implies that national RFs encourage community-based institutions. Quadrant comparisons show the variability of most currencies when compared from different perspectives. Combined analysis points to distinctions made by national RFs in conjunction with PID as the key factor influencing SMG. Taken all together, these findings speak to the "fierce urgency" mentioned by President Obama, particularly at this time of global crisis, of empowering all stakeholders to the greatest extent possible. Concluding thoughts on these findings follow in the upcoming and final chapter of this work.

Chapter 7 - Conclusion and Final Reflections

This study aimed to contribute conceptually and empirically to the body of literature that investigates monetary governance. It answered three inter-related research questions:

- How can the potential for stakeholder influence over monetary governance be theoretically explored?

- How can the potential for stakeholder influence over monetary governance be empirically explored, particularly across different types of currency institutions?

- Which combination of governance arrangements and currency functions allow for enhanced 'Shared Monetary Governance' (SMG)?

Answering these research questions was achieved by focusing on those aspects of monetary governance that hinder or facilitate stakeholder access to relevant decision-making processes. In particular, the study conceptually and empirically explored (by means of a comparative investigation of four currencies) the relationship between external and internal stakeholders' influence across different monetary functional-geographical scales (local through supra-national). The criteria used were: levels of RF consistency, transparency, accountability and public participation. Follow-on questions regarding the role of institutional sponsorship which were presented at the end of Chapter 3 are also discussed shortly.

This chapter concludes the study by offering final reflections on the findings, the limitations of the study and potential directions for future research. It is organised in three parts. The first provides a short overview of this work and summarises the empirical findings and key contributions. The second part concentrates on limitations of the work and possible directions of future research. Finally, the third part offers a number of broader reflections on the usefulness and relevance of findings to current discussions regarding monetary governance, some of which were inspired by the still unfolding financial crisis.

7.1 Summary and Contributions

Chapter 2 reviewed literature concerning understanding money, its scale and various approaches to monetary governance. This chapter identified a number of serious limitations with previous

approaches and posed the research questions mentioned above while highlighting the need for a modified conceptual and analytical framework for exploring the potential of currencies for participatory monetary decision-making.

Chapter 3 put forward a new conceptual framework of 'Shared Monetary Governance' (SMG), to theoretically capture the interactions between external governance, internal governance and scale as they affect the sharing of monetary decision-making power. The SMG framework emphasises the complexity of competing influences in governing currency institutions. It applies open governance concepts to monetary institutional processes as they are affected by external, internal and scale related factors. Open governance requires consistent governing frameworks, formal processes to create transparent and accountable space for participation, and scales small enough to operationalise those principles. Applied to money this entails the governance of three institutional processes, namely seigniorage, issuance and backing decision-making. **Seigniorage** revenues are an important derivative of the currency creation process which also feed directly back into currency **issuance** functionality and decision-making. Furthermore, deciding how and with whom to share revenues directly empowers currency institutions. Issuance, of course, is the key process which initiates use of a currency. Monetary governance should facilitate transparent and accountable shared issuance decision-making processes for all stakeholders, taking into account the need to complement rather than compete with national currencies. Since choice of backing controls the value and behaviour of a currency, backing is a key factor in controlling access to and circulation of the currency. Community-sponsored complementary currencies appear to provide the most accessible implementation of shared choice of backing. Indeed, the SMG theoretical framework allows us to explore how cooperation between national and community level monetary institutions improves currency institutional accessibility. This supports the work of Bowring (1998) who advocated community-based currencies (Time Dollars in particular) as a means of democratising both money and knowledge, thus enhancing transparency and accountability through participatory institutional decision-making processes.

The SMG theoretical framework was empirically applied by means of a comparative analytical framework (explained in Chapter 4) and results were presented in Chapters 5 and 6. These chapters explored the impact of national Regulatory Framework (RF) tolerance, internal power sharing, and scale on the SMG of four currencies in the USA. In particular, the consistency of US national RFs

was measured in terms of how they treat those currency institutions, while transparency, accountability and participation, key components of Participatory Internal Decision-making (PID), were measured via shared decision-making processes as applied to seigniorage, issuance, and choice of backing. Scale was measured by counting the number of monetary functions filled by a currency, and by classifying the circulatory range of the currency. The index created using this methodology provided a means of quantifying the various factors of currency institutional governance to produce an indicator showing how effectively any currency institution facilitates the sharing of monetary governance. While the methodology introduced in this work does not account for several informal factors in currency decision-making processes, and can provide only an approximation of the combined effects of currency scale on those governance processes, it does facilitate understanding how - by emphasising certain functions of money at different geographical ranges – various currencies can facilitate increased decision-making access for all monetary stakeholders.

The follow-on questions posed at the end of Chapter 3 attempted to shed more light on two areas of inquiry:
questions:

- To what extent, if any, does institutional sponsorship affect levels of RF Toleration, PID, scale, and in turn, overall SMG?

- To what extent, if any, does scale determine the degree of SMG, and do the smallest scale currencies necessarily have the highest levels of SMG?

Answering these more specific questions first required comparing RF Tolerance, PID, and scale for each currency, as was done in Chapter 5. Those comparisons revealed that contrary to preliminary expectations, community-based institutional sponsorship does not guarantee national RF tolerance, and more surprisingly, business sponsorship also did not gain RF favour. Furthermore, although community sponsored currencies tend to have higher PID levels, findings showed community-based institutions can have less RF toleration, as Humboldt Exchange Dollars shared with Deli Dollars, despite the Humboldt Exchange Dollars institutional linkage with the US Dollar. Hence neither community sponsorship nor small scale, nor even deliberate linkage to the national currency automatically lead to RF Toleration. Similarly, there was also no correlation between institutional sponsorship and scale, as the unexpectedly large scale of Humboldt Exchange Dollars, contrasted

against the SPC Deli Dollars, confirms. Hence the commonalities between these two very different non-national currencies were more striking than the differences between them.

Answering the questions posed in Chapter 3 regarding effects on SMG of all these jostling influences required further analysis, which was carried out in Chapter 6. The inter-related effects of institutional sponsorship on various monetary governance influences were analysed together in different combinations, highlighting relationships between those factors. Numerical scores and visual representations of each juxtaposed set of influences by individual currency and as a group were therefore compared. Again, somewhat unexpectedly, national RF Tolerance appeared to outweigh the effects of small scale, with the US Dollar scoring a higher level of SMG than the community-sponsored SPC Deli Dollars. Nevertheless, the relatively marginal RF Toleration and relatively large scale of Humboldt Exchange Dollars brings into focus its similarity to Deli Dollars, particularly against the backdrop of Tables 6.12, where they shared nearly identical PID and Scale Interaction sums. Indeed, as Table 6.19 showed, they also shared quite similar SMG levels. However, despite the participatory advantage that small scale gave to Deli Dollars, as Table 6.18 shows, it is institutional sponsorship, combined with external (national) RF Tolerance, rather than small scale alone, which determines overall SMG.

Hence, while scale does have a demonstrable impact on decision-making, tolerance for currency institutions by national RFs and Participatory Internal Decision-making were the most important factors in SMG outcomes. Although sponsoring institutions which complemented national monetary functions achieved higher SMG scores, US national RFs did not appear to favour business sponsored currencies over community-based currencies, nor to deliberately inhibit circulation of non-national currencies. Indeed, the case of Humboldt Exchange Dollars showed that even a medium scale currency can share significant governance power, while Deli Dollars showed that market-based institutions can also sponsor a currency which empowers the local community.

Thus, thinking within the framework of Shared Monetary Governance has wider reach than simply focusing on the economic aspects of a community-based currency. By re-politicizing the decision-making aspects of money creation, currencies can empower stakeholders through multi-level institutional feedback, encouraging empowerment in other areas. This feedback has a wide range of socio-economic applications, as the Japanese governmental (2007) interest in community-based currencies indicates. Comparisons across more currencies and national RFs will show how far these findings are broadly generalisable, allowing money to be evaluated and used from a stakeholder empowerment perspective. These issues are explored further below.

7.2 Limitations of the Study and Future Research

Scope limitations of this thesis, insufficient theoretical frameworks, as well as methodological impediments directly impacted upon the scope of the study presented in this work (see also Hutchinson, 2002). The *scope* of this work limited the overall investigation to that which was manageable given the time, space and budget constraints of the study. The need to construct a new approach arises from the lack of a united perspective joining open governance perspectives with those that focus on the economic benefits and functions of money. These separate perspectives required merging in order to construct the SMG theoretical framework, thus meeting the need for a holistic approach called for by Hutchinson (2002). This framework had to be capable of informing the search for a type of money most effective in sharing both formal decision-making power and simultaneously fulfilling the various functions of money in a manner that allows participatory access to monetary decision-making from a currency user perspective. Implementing a study of this new paradigmatic framework presented significant methodological challenges, which also limited what could be accomplished given project resources.

7.2.1 Limitations of the study

More specifically, the lack of a wide literature discussing *participatory decision-making* for currency-specific topics, namely the seigniorage, issuance and backing of a given currency, made it necessary to apply a synthesis of existing literatures. This synthesis combined literature ranging from participatory governance to that of conventional economics in order to map out a set of literatures applicable to this study (see Table 2.4). This limitation in the literature also extends to the lack of compatible paradigm and accompanying theoretical framework, which the previously mentioned literatures were therefore used to create. While participatory budgeting is discussed as a case of participatory democracy, and consensus-based decision-making is applied to small-scale institutions, these literatures do not take into account the problems associated with currency creation, such as the interaction between monetary decisions and the functions of money. The literature which does deal with such effects, on the other hand, treats the making of these decisions by politically-independent experts as a given. Hence the paradigms of open governance and monetary decisions are artificially separated into almost mutually exclusive approaches. This study reviewed a wide range of literature in order to synthesise a new more inclusive approach.

The theoretical framework for this new paradigm, referred to as Shared Monetary Governance, was also limited both by the lack of literature regarding participatory financial decisions, and also by the very newness of the concept of applying open governance principles to what is normally the exclusive domain of banking experts. Shared Monetary Governance as a theoretical construct needs a wider literature with which to engage which discusses the ability of the key external and internal decision-makers in any currency-issuing organisation to share that decision-making power with the users of the currency. This literature on the whole simply does not exist, and what does exist lacks general accessibility. Although not all currency users have the resources, be it education, financial experience, time, or other resources, to make-up part of a currency institutional core decision-making group, they all emphatically do have the right to a voice in monetary governance. Some discussions of complementary currency, as well as those of participatory budgeting do raise these concerns, but not within the specific context of currency decisions as they impact the functions and users of money.

Combining the power of *external and internal* decision-makers with the effects on currency function raises the question of how to include non-decision-making users, who constitute the majority of users of any money. The Influence of external regulation on internal currency decisions interacts strongly with the functions of money, which impact **all** users, yet these three-way interactions are under-theorised and under-studied. This study proposes Shared Monetary Governance as a potential framework within which to begin the process of applying open governance principles evenly to all of the processes and users of money, yet is limited by the lack of dialogue and lack of compatible frameworks.

Methodologically, this study required constructing a concrete means of measuring the level of Shared Monetary Governance offered by any given currency. While various similar studies, such as the measure of independence for any given central bank, attempt to accomplish similar goals, no methodology exists which takes into account the interactive nature of the various factors in currency decision-making. The methodology presented in this study created a single index that facilitates a greater understanding of the complexities and possibilities for greater decision-making participation in any given currency institution by all users of that currency. The small number of currency institutions available for study presented a significant methodological challenge, as did the need to synthesise the scale of each currency institution from the factors of functions of money and

geographical range. No existing methodology allowed for such hybrid measurement within indicators. Inevitably, this hybrid methodology is limited by the complexity of the interacting influences that it attempts to 'quantify'. Again, larger sets of cases, involving more currencies, could provide greater understanding of the underlying processes influencing monetary governance. Nonetheless, despite the limitations to this methodology and the theoretical framework it operationalises, this contribution is important as a first, albeit tentative attempt to empirically 'capture' the potential for open governance in the case of money.

7.2.2 Future research

As observed earlier, the small number of cases investigated in this study was one major limitation. This is another direction for future research. Expanding the study to several countries, using data for currencies within each country will allow better comparison across different national Regulatory Frameworks, and across different currencies within each nation. A feasible extension of the study was envisaged to include England, Wales, and Ireland. Comparisons across these countries are expected to be facilitated by the shared central government of the United Kingdom, whilst bearing in mind that the devolved governments of each country may involve different policy regimes, necessitating different RF measurements for each country. Currencies that could be investigated across the UK include the British Pound Sterling, the Totnes Pound in England, LETS in Wales, Westport Reeks in Ireland, Time Banks UK and one or more privately issued currencies in each country.

Other potential avenues of future investigations include expanding the methodology to allow for informal barriers to participation for both decision-making and non-decision-making currency users, as well as potentially including more external regulatory influences beyond national legal frameworks. For instance, the policies of major businesses toward the issuance and acceptance of complementary currencies can have a significant impact on the decisions around those currencies in local communities. Indeed, Gomez (2008) describes Argentine CCs forming linkages between major local businesses and their crucial suppliers, illustrating the influence of business decisions, *although external to the currency institution*, on currency governance. Such methodological changes would require more resources to carry out investigation, but would allow the formation of a more complete picture of the influential factors in sharing the governance of money among all money users.

7.3 Final Reflections on Global Monetary Governance

This work merges the paradigm of monetary governance with monetary function, both of which are necessary and integral to a monetary system. Money, as opposed to markets or the environment, though Glover (1999) rightly decries its neglect, is focused on here as a key component which drives economic systems. Governance participation is a stakeholder right, which while denied by inaccessible monetary institutions, may be partly redressed through SMG.

7.3.1 Broader Theoretical and Policy Implications of Participation and Institutional Scale

Governance of money and access to monetary decision-making are important social concerns enmeshed in a wider social context. Some of these concerns include commodification and monetisation as companions to embeddedness and of economic, and as Bowring (1998) points out, intellectual participation. Economic justice and embeddedness have been contrasted with commodification by Polanyi (1944), Thrift (2006), Williams (2003) and others. Although embeddedness and de-commodification are related to governance, neither guarantees shared decision-making among stakeholders. Paid work, by William's (2003) definition, is commodified, therefore, work paid in a hypothetically fully embedded currency - not available as a Polanyian (1944) fictitious commodity - remains commodified, merely within a more socially rather than market embedded context. Nevertheless, that embeddedness does not assure participation in decision-making for currency users. Finally, money is not necessary for commodification, as gift economies demonstrate. Therefore these important concerns, though not dealt with directly in this study, certainly merit future consideration.

Open political and economic governance is characterised by transparent and accountable participatory processes, which price inflation, currency exchange and housing speculation affect in undemocratic ways. Likewise, issuance of credit and money via loans, wages and salaries are almost entirely left to unaccountable and frequently non-transparent credit and employment markets. SMG provides a measure which could facilitate stakeholder access to this conjunction of decision-making and functional monetary institutional processes.

7.3.2 National Regulatory Framework Tolerance toward Local Currency Institutions and the Current Financial Crisis

The impact of US national Regulatory Frameworks (RFs) on the three Complementary Currency (CC) institutions studied highlights Bohman's (1997) contention regarding the ability of national monetary RFs to control local governance agendas. The proposed conceptual framework of Shared Monetary Governance (SMG) explores the ability of currency institutions to facilitate decision-making access for all monetary stakeholders, beginning at the local level. Local economic development paradigms, as Seyfang and Sen pointed out earlier, lead back to connections with the larger economic and social world of international finance. The importance of Shared Monetary Governance lies in the potential for CC (especially community-based) institutions to facilitate transparency and accountability through stakeholder access to monetary decision-making, particularly in light of the impact of the on-going Credit Crisis (see Monbiot, 2009). If national RFs destabilise or are biased against CCs, then their full potential as tools for dealing with the problems to which they are applied will not be available.

These findings suggest that emphasising individual monetary functions such as SoV at the local level (which allow CCs to avoid competition with the national currency) seem to produce more harmonious relationships with US national RFs. Such cooperation between different currencies (national, CCs) facilitates both participatory governance and functional economic participation. On the other hand, currencies which emphasise the UoA and MoE functions of money without further cooperative moulding of internal institutional processes may limit opportunities for cooperation with national RFs. Stiglitz (2003) asserts that the stability of international finance is shaped by institutional governance, yet internationally and nationally monetary stability varies by region, making one-size-fits-all monetary policy inappropriate, as Mohamad (1999) recounts. Competing MoE and SoV stability concerns return to the governance components of issuance and backing, though as a means of stabilising the monetary system, Monbiot's (2009) suggestion of competing currencies is by no means new. The independence of national money creation has not kept national money stable, as the ongoing global financial crisis demonstrates. Indeed, the very complexity of creation and issuance of national currencies serves to deter users of national money, as does the doctrine of central bank independence, from accessing national monetary decision-making.

Knowing how well institutions share decision-making could help stabilise monetary governance when different level institutions are in conflict over priorities. Dodd's (1994) concern over the destabilising potential of international financial networks could be addressed in part through cooperation between national and community-level monetary institutions. Differences between goals, priorities, interests, and influence among the bodies which regulate monetary policy at the international level is likely to lead to conflicts both within those bodies and also between those bodies and other actors dependent upon them for support. Furthermore, top-down monetary governance is non-inclusive, structurally increasing the resistance to full stakeholder access. Knowing what level of power-sharing is taking place within currency institutions provides stakeholders with greater opportunities for involvement in monetary priority setting. Furthermore, as international concerns can take different shape from concerns at regional levels, potential for conflict between monetary regulators at different levels seems nearly unavoidable. A move toward greater SMG through more support for local currencies could thus help re-establish greater monetary and social stability.

7.3.3 Transparency and Accountability through Participatory Internal Decision-making

Calls for currency competition attempt to address monetary functionality but neglect institutional governance, as Mendoza (2002) acknowledges while pointing out that issuance of many national currencies is deliberately non-transparent. Indeed, community-based currency advocates like Linton (1994), Glover (nd), Boyle (2000) and Cahn (2006) assert that most national currencies lack transparency, accountability and participation. However, proposals for competing privately issued currencies (Hayek, 1976) also lack these elements, since currency competition alone may increase financial system stability, but neglects crucial decision-making elements.

Stakeholder control over and access to economic processes implies the need for publicly transparent and accountable monetary governance. In this context, international and national RFs are one side of the governance coin, with both national and local level currency institutions being the other side. Closed external governance (regulatory, market) forces are juxtaposed against potentially more

open currency institutions with varying levels of stakeholder inclusion. Stakeholders can choose to support more accessible monetary institutions when they know how effectively those institutions share decision-making power.

Against this background, a key contribution of this work is that it introduced and empirically tested a means of measuring shared monetary decision-making which, in turn, can facilitate changes to monetary RFs, thus potentially allowing higher levels of stakeholder participation in monetary governance. Where CCs, particularly community-sponsored CCs, survive as functionally viable forms of money and use inclusive governance practices, they can and should be used to empower more stakeholders through increased decision-making access.

7.3.4 Policy Recommendations and Conclusion

Fung (2001) suggests creating links between institutions at various levels. In light of the findings in this study, a similarly linked three-tiered financial system arises as a logical policy recommendation that could potentially allow all monetary stakeholders a significantly increased level of access to monetary decision-making. First, each community having its own community-based MoE currency as well as multiple community Time Banks would allow more direct input from currency users, and more direct control over local economies. Those community currencies may need to be regionally connected to the national currency or to the currencies of neighbouring communities, allowing greater flexibility for local communities while coordinating financial concerns across several regions. At a second level, national currencies can continue to allow independent but connected financial structure across national and international boundaries. At a third level, the creation of a truly international currency, separate from any domestically used national currency, would provide international money users with a neutral and coordinated financial system for travel and international business needs.

Participation in currency decision-making is important from several standpoints: economic, social and ethical. From an economic perspective, the more participation in decision-making and hence buy-in, a currency institution has, the more circulation, and the more support from users of that currency. From a social point of view, recalling the "Constitutional Consensus" mentioned previously by Huber, sharing the benefits of common resources, including money, increases the

overall social good by being consistent in adhering to that consensus. Readers will also recall Zelizer´s contention that money is a social construction. As such, money therefore belongs within the social sphere, and thus also the political. In a democratic society, this intertwining of the economic with the social and political must acknowledge the inherent right to meaningful economic as well as social and political participation in decisions which affect society. Clearly, money deeply affects both society as a whole, and members of society individually. Ethically, Sen´s previously cited assertion that communities have a right to control their own development requires that communities be allowed to participate meaningfully in monetary decision-making. Shared Monetary Governance, by providing a measure of such participation, hopes to increase that buy-in and social good which is not only the consensus in democratic societies, but should also be a basic human right.

Appendices

Appendix 1: Regulatory Frameworks Tolerance Data Table

Regulatory Frameworks Tolerated Set	Currency		US Dollar	H.E.	Time Banks USA	Deli Dollars
IN	Currency is legal tender	1	y			
	Is the currency accepted for tax payment?	95%	y			
	encouraged to be accepted or available credits/tax breaks, incentives awarded	90%		some	many states	
	is the currency Overseen by a central bank	80%	y			
	Currency governance structural forms, procedures or office hours mandated?	70%		some	some	
	Are earnings in the currency reportable to benefit, tax or other agencies (by requirement)?	60%	y	y		y
	Is the look and feel of notes regulated or prohibited?	50%	y	y	n/a	y
	Is circulation of the currency restricted?	45%		some	n/a	y
	Must backing, exchangeability, convertibility or value be pegged to national money?	40%		y	n/a	y
	Are benefits recipients (dole/welfare, disability, etc.) penalised for using this currency?	30%		some		y
	Are the processes which apply to this currency inconsistent in law or application?	20%				initially

	Is this currency overseen as a financial security?	10%				y
OUT	This currency is outlawed	0				
	RF Toleration percentage		1	0.65	0.8	0.5
	Processing: More y above 50%: more Tolerated; More y below = less Tolerated					

Appendix 2: PID Data Scoring

Internal Governance	Score
Shared Seigniorage	
seigniorage revenues reinvested as shareholder dividends or profit	1
Seigniorage revenues split with National Treasury	2
seigniorage revenues shared between currency holders	3
seigniorage revenues donated to non-local charity	4
seigniorage revenues invested in local community	5
Shared Seigniorage tally:	S. total
Shared Issuance Decision-making	
Issued by Private Firm or Individual without public consultation	1
Issued by National, supranational or international Governmental Authority	2
Issued by publicly chosen or elected Local Authority	3
Issued via elected management committee of Community, Civil Society Group or local business	4
Issued via open walk-in vote of community or Civil Society Group	5
Shared Issuance tally: (In cases of coercive issuance, Total Participatory Internal Decision-making Score = -1)	I. total
Shared Choice of Backing	
Fiat currency with no user decision-making participation or representation	1
Fiat currency with limited user decision-making participation	2
Backed by commodit(ies)y, no user decision-making participation or representation	3
Backed by cash or commodities, limited user decision-making participation	4
Backed by both commodity and cash redemption choice with full user decision-making participation	5
Shared Choice of Backing tally:	B. total
Coercively Issued: Automatic OUT and score of "-1"	Fully OUT
The currency's long-term strategy is user consensus based with open membership direct participation	Fully IN
Total PID score	45
Percentage 'IN' the set of PID Currencies: (Higher scores indicate more participatory governance)	100%
1 to 6 are 0.0 or Fully OUT of the set	
7 to 11: 7 = 10%, 8 = 30%, 9 = 50%, 10 = 70%, and 11= 90%	
12 to 45 are 1.0 or Fully IN the PID set	

Appendix 3: Sum Tables

Table A3.1: Sums of Combined Possible Governance Scores

	Highest Possible Score	Sample1	Sample2	Sample3	Lowest Possible Score
RF Toler.	1	1	.65	.7	0
PID	1	0	1	-.3	-1
Gov. Total	2	1	1.65	.4	-1

Table A3.2: Sums of Internal Processes and Scale Interaction

	Highest Possible Score	Sample1	Sample2	Sample3	Lowest Possible Score
% SPC	1	1	.8	.7	0
PID	1	0	1	-.3	-1
Internal vs. Scale Total	2	1	1.8	.4	-1

Table A3.3: Sums of External Regulatory and Scale Interaction

	Highest Possible Score	Sample1	Sample2	Sample3	Lowest Possible Score
RF Tolerat.	1	1	.65	.7	0
% SPC	1	0	1	.3	0
External vs. Scale Total	2	1	1.65	1	0

Table A3.4: Total Combined Governance Sums

	Highest Possible Score	Sample1	Sample2	Sample3	Lowest Possible Score
RF Tol.	1	1	.65	.7	0
PID	1	0	-.2	.3	-1
% SPC	1	0	1	.3	0
Combined Governance Total	3	1	1.65	1	-1

Appendix 4: Quadrant Figure Tables

Table A4.1: Quadrant Analytical combinations

		Horizontal score	
		Minimum or absent	Maximum or considerable
Vertical score	Maximum or considerable	**D**	**A**
	Minimum or absent	**C**	**B**

A quadrant Currencies with maximum of BOTH elements

B quadrant: Currencies with minimal or absent vertical element BUT with maximum or considerable horizontal element

C quadrant: Currencies with minimum or absence of BOTH elements

D quadrant: Currencies with maximum of vertical element but with minimal or absent horizontal element

Table A4.2: Tolerance by Regulatory Frameworks, Participatory Internal Decision-making comparison quadrants

Tolerated but NOT much PID	"Both tolerated and PID"
Neither tolerated nor PID	PID but NOT well tolerated

Similarly to the summations, Table A5.3 compares PID and scale for each currency PID for the X component, and using scale as the Y:

Table A4.3: Internal governance vs. Scale

SPC but NOT much PID	"Both SPC and PID"
Neither SPC nor PID	PID but NOT SPC

Table A5.4 uses SPC % as the X coordinate and Regulatory Framework toleration as Y:

Table A4.4: external RF tolerance vs. scale

Externally Tolerated but NOT SPC	"Both tolerated and SPC"
Neither tolerated nor SPC	Tolerated by external regulatory governance by NOT SPC

Appendix 5: Alternative Table Views

Alternative view of Table 2.1: Stakeholders in Monetary Governance

Stakeholders in Monetary Governance:	*External Governance* National Regulators as **indirect stakeholders**	*Internal Governance* Institutional decision-makers as **direct stakeholders**
		Monetary Scale Users affected by money as **direct stakeholders** with no currency institutional decision-making power

Alternative view of Table 2.2: Institutional Governance Principles

Institutional Governance Principles:	*External Governance* Consistent Regulatory Frameworks **(by indirectly affected decision-making stakeholders)**	*Internal Governance* Transparency Accountability Participation **(by directly affected decision-making stakeholders)**
		Monetary Scale Users affected by money but not included in currency institutional decision-making **(by directly affected stakeholders)**

Alternative view of Table 2.3: Governance Principles Applied to Monetary Institutions

Monetary Governance Applications:	*External Monetary Governance* Consistent National Regulatory Frameworks **(indirect stakeholders)**	*Internal Monetary Governance* Transparency Accountability Participation in currency institutional decisions regarding **Seigniorage, Issuance and Backing** of the currency **(direct stakeholders)**
		Monetary Scale Influence of currency users not included in decision-making processes **(direct stakeholders)**

Alternative view of Table 3.1: Interrelation of Monetary Governance Processes

Monetary Governance Processes:	*External Governance* **Toleration by National Regulatory Frameworks** for non-national currencies **(by indirectly affected stakeholders)**	*Internal Governance* Participatory Internal Decision-making **(PID)** **(by directly affected stakeholders)**
		Currency Scale as percentage of SPC Currency Users (no decision-making input) affected by the functions of money at various geographical ranges **(by directly affected stakeholders)**

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Appendix 5 Addendum: Venn Diagrams of Currency Stakeholders and Power over Money:(Alternative Table Complements)

Direct (Internal) Currency Stakeholders: Decision-makers vs. Users

	Money users *with* decision-making authority.
	Money Users with **no** decision-making authority.
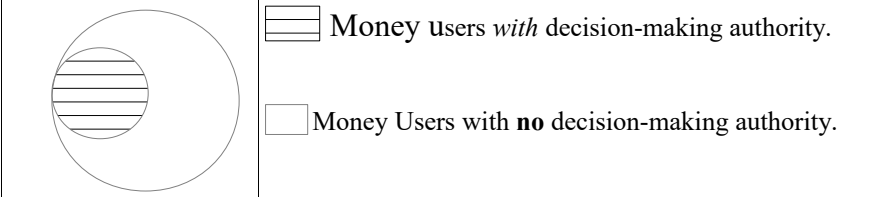
All Currency Stakeholders (Indirect, Direct/internal Stakeholders)

	Indirect/external Institutional Stakeholders
	Direct/internal Currency Institutional Stakeholders
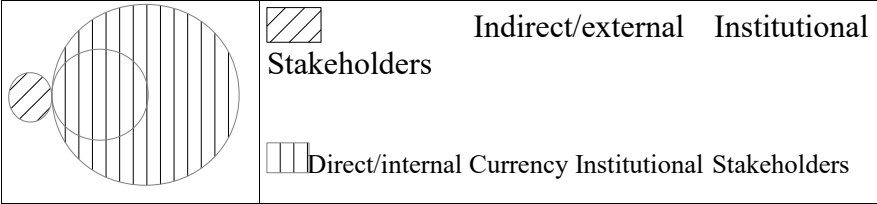
Currency Stakeholders With Decision-making Authority vs. Without Authority

	Indirect Institutional Stakeholders (because they are external to the currency institution, but have decision-making authority over the currency)
	Direct (internal) Currency Institutional Stakeholders **with** decision-making authority
	Direct (internal) Currency Institutional Stakeholders *with* **no** authority (i.e. Users)
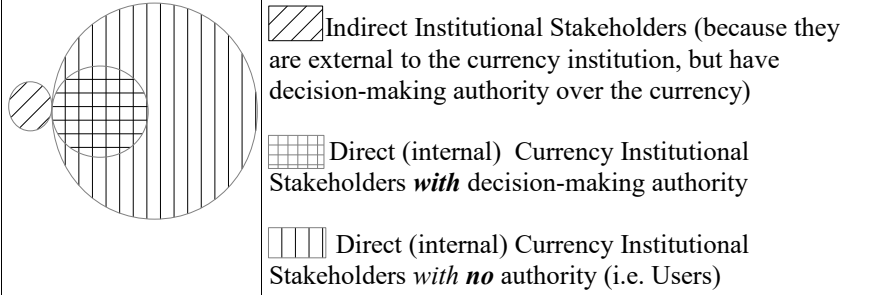
Community-based currencies expand the number of Direct Currency Stakeholders who can exercise participatory decision-making power over money. Thus more people can *create, keep, and grow* their own resources, to the benefit of the entire community, by *building, using and investing in* local community institutions.

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